

ANGLIA RUSKIN UNIVERSITY

FACULTY OF HEALTH, EDUCATION, MEDICINE AND SOCIAL CARE

HOW FOREST SCHOOL SUPPORTS INCLUSIVE  
PRACTICES: OBSERVATIONS OF CHILD  
ENGAGEMENT AND VIEWS OF TEACHERS AND  
PARENTS IN ONE ENGLISH PRIMARY SCHOOL

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To my dad....

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ABSTRACT

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DOCTOR OF PHILOSOPHY

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This study examined the Forest School approach as a way for all children to access outdoor education. In so doing, this study related the values and philosophical principles of outdoor education and inclusion. A key characteristic of Forest School is that it encourages child-led activities to involve pupils in the learning process. Hence, this study examined the way the Forest School could facilitate the needs of pupils, including pupils with special educational needs and/or disability. The research question was approached through an exploratory embedded case study research design within a mixed-methods research paradigm informed by critical realism. The primary research tool was the Leuven Scale of Involvement and targeted children in three different settings. The observations took place while the children were learning in the outdoors at a Forest School, while they were learning indoors, and at playtime during recess. To triangulate the research methods, the study was enhanced by a questionnaire that gathered the parents' stances and perceptions about the curriculum in their children's school. Finally, the study used semi-structured interviews to collect qualitative data from the teaching staff. The research identifies deep-level learning levels of pupils with SEND in outdoor education sessions. The Forest School approach was beneficial to all students, particularly to students with SEND. Hence, the research found that Forest School could enable all pupils in Year 3 and Year 4 to fully access the curriculum. The findings also discuss positive outcomes for children and conceptualised disablers and enablers in participating in Forest School. The research concludes by suggesting the use of experiential learning for all pupils, which could be enhanced through the integration of outdoor education into the curriculum.

**Keywords:** critical realism, deep-level learning, Forest School, SEN/D, outdoor education, experiential education

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# Chapter 1 Learning in the outdoors

## Preamble

The main argument of the thesis is that Forest School (FS) can provide a valuable learning environment for children with special educational needs and/or disability (SEND) and that it can promote environmental education and positive attitudes towards nature. The thesis argues that by providing opportunities for sensory exploration, physical activity, and social interaction in a natural setting, FS can support the development of children with SEND and provide them with meaningful and enjoyable learning experiences. The thesis also argues that by engaging children in hands-on, experiential learning in nature, FS can help foster environmental awareness and a sense of connection to the natural world. These arguments are supported by a range of evidence from the literature and empirical data collected through observations, interviews, and questionnaires with parents and practitioners.

In recent years, outdoor education has gained significant attention due to its potential to enhance student engagement, physical activity, and environmental awareness (Rigolon et al., 2018; Walker, 2023). Despite this growing interest, research is limited on how to make outdoor education programmes more inclusive and accessible to diverse student populations (Lieberman & Hoody, 2000; Rickinson et al., 2004). Studies have shown that exposure to nature can have positive effects on mental and physical health (Reed, 2005; Kaplan & Kaplan, 1989; Kalyva et al., 2007), with urban residents and children in particular needing daily contact with nature to support their development (Rivkin, 1997; Stavrianos, 2016). The increased efforts to develop and expand urban green areas, such as the conversion of outdoor spaces in schools into natural green habitats, have been a response to this need (Stavrianos, 2016; Waller et al., 2010).

The purpose of this thesis is to explore how FS, as a specific type of outdoor education, can promote engagement among diverse student populations. By investigating the implementation of FS programmes, this study aims to provide insights into how outdoor education can be made more accessible and inclusive for all students while considering the distinct characteristics of outdoor education, environmental education, and place-based education.

This research examines inclusive practices in a primary school that uses FS and outdoor education in England. Inclusive practices are defined in this thesis as practices that promote equitable participation and learning outcomes for all learners, regardless of their abilities or backgrounds. The study is based on a mixed-methods research design, with a particular focus on the experiences of two children with SEND in an FS programme. While the sample size is small,

this study primarily aims to provide a detailed exploration of the levels in the learning process of these children and the implications for inclusive practice in outdoor and environmental education. This study also aims to contribute to the existing literature on inclusive practices in outdoor and environmental education and provide insights for practitioners and policymakers

### Overall aims of the research

The purpose of this thesis is to explore how FS can be used as a pedagogical approach in outdoor education to promote learning and inclusion for children with SEND. This research aims to explore the effectiveness of FS and inclusive practices in promoting environmental education in early childhood education, with a particular focus on the experiences of children with SEND. Inclusive practice in this study will be measured by involvement scores through the Leuven Scale of Involvement (LSI). The research also aims to investigate the effectiveness of environmental education programmes in promoting sustainable living practices and environmental stewardship among learners. In addition, the study aims to identify the key factors that contribute to successful environmental education programmes and understand how these programmes can be improved to better promote sustainable living practices and environmental stewardship. By focusing on environmental education in the study, the research aims to contribute to the achievement of Sustainable Development Goal (SDG) 4.7, which seeks to ensure that all learners acquire the knowledge and skills needed to promote sustainable development. The research also aspires to identify best practices in environmental education that can be used to support the achievement of this goal.

To fully understand the scope of this research, some of the core concepts and definitions that underpin the study must be established from the start.

Firstly, the terms FS, outdoor education, environmental education, and place-based education must be differentiated. FS has gained popularity in the UK and other parts of the world. FS is characterised by regular and repeated visits to natural settings, child-led and experiential learning, and the use of natural resources for play and learning.

Outdoor education, on the other hand, refers to any educational experience that takes place in the outdoors, regardless of the pedagogical approach or the learning outcomes. Environmental education focuses on learning about the environment and sustainability, while place-based education emphasises the connection between people, communities, and their local environment.

Despite overlaps and similarities among these concepts, the specificities of FS and how it differs from other outdoor education approaches must be recognised. This thesis focuses specifically on FS and its potential to promote learning and inclusion for children with SEND.

Another critical concept to define is inclusivity. In this thesis, inclusivity is defined as the practice of ensuring that all children, regardless of their backgrounds, abilities, or needs, have equal access to learning opportunities and are fully integrated into the learning community. Inclusivity is not only about accommodating the needs of children with SEND but also about creating a welcoming and supportive environment where all children can thrive.

While the focus of this thesis also involves children with SEND, inclusivity should be a core value and practice in any educational setting. By promoting inclusivity, we can create more equitable and just learning environments that benefit all children.

In terms of the methodology of this study, the inclusion of only two participants with SEND may seem limited. However, the focus of this research is not on generalising findings to a larger population but rather on in-depth exploration of the experiences and perspectives of the participants. The goal is to provide a detailed and nuanced understanding of how FS can be used to promote learning and inclusion for children with SEND.

Overall, this thesis aims to contribute to the growing body of research on FS and its potential to promote learning and inclusion for children with SEND. By providing a clear and comprehensive framework for understanding the core concepts and definitions that underpin the study, this research can make a valuable contribution to the field of outdoor education and special education. The study will investigate the implementation and outcomes of FS programmes and provide insights into how outdoor education can be made more accessible and inclusive for *all* students in KS2. To achieve this, the study will broadly examine the following research question:

🌳 How can Forest Schools support inclusive practices?

To answer this question, the study will employ a mixed-methods approach, combining surveys and interviews with participants in outdoor education programmes. This study design will allow for a comprehensive understanding of the experiences and perspectives of individuals with disabilities in outdoor education and insights into potential strategies for promoting greater inclusion and accessibility.

By answering the main research question, this study aims to contribute to the ongoing discussions on how to make outdoor education more accessible and inclusive for all students,

while considering the distinct characteristics of outdoor education, environmental education, and place-based education. The study also seeks to provide practical recommendations for schools and educators to design and implement effective and inclusive FS programmes.

“There has been a great deal of interest in outdoor education over the past 30 years”, which indicates “growing evidence in research studies” that “demonstrate the benefits of giving children regular opportunities to learn and play outside” (Stavrianos, 2016, p. 420). These studies include educational research in outdoor environments within the school grounds, outdoor environments beyond the school, and FSs. Experiences of children spending time in wild natural environments such as in the woods, by riverbanks, and at beaches and mountains are beneficial in various ways, including academic and behavioural improvements (Gill, 2014; Hart, 2007; Moore, 2009).

To guide this research, the ontology of critical realism (Bhaskar, 1978) was adopted as it appears to best fit my values as a teacher and a researcher.

## Background to the study

Inclusion, accessibility, and outdoor education are central concepts in this study. Inclusion refers to the practice of providing equal opportunities and resources for all individuals, regardless of their differences or abilities. Accessibility refers to the degree to which facilities, programmes, and services are designed to be used by people with disabilities or other diverse backgrounds. Outdoor education refers to learning that takes place in outdoor settings and often emphasises hands-on experiences and environmental stewardship. These concepts and their relationships should be clarified as they form the basis of this study. For example, an inclusive outdoor education programme would aim to provide equitable access to outdoor experiences for all individuals, regardless of their abilities or backgrounds. Such a programme would consider the physical, social, and emotional needs of all participants and strive to create a welcoming, supportive and engaging environment for everyone.

On reflection, my interest in the positive effects of outdoor education on learning stemmed from my personal and professional experiences. In particular, I remember as a child playing with joy in natural settings with peers on many occasions. These thoughts were always dear to me and may have played a role in my research interest. Furthermore, my interest grew in analogy to an awareness of the potential threats to children’s experiences of outdoor learning and play (Louv, 2005), such as the gradual reduction of green settings in urban areas and restrictions due to safety regulations and concerns (Southall, 2014). My interest in working with children in primary

school with SEND in the outdoors developed when I experienced interactive and flexible modifications to the learning setting that could support their involvement in the learning process and inclusion (Lloyd, 2008). While working as a special needs coordinator for a primary school, I was allowed to work with a child with severe learning difficulties. During this period, I noticed a change in a child's behaviour when I conducted a lesson for his class in the outdoors. I became intrigued by outdoor education as I witnessed a positive change in his behaviour and learning motivation while outside. This was where he seemed most happy and intrigued. I immediately became interested in the way outdoor education can accommodate the involvement of pupils with SEND in the learning process.

### Underpinning this research

The following section briefly discusses the core concepts and notions that are central to the thesis to add clarity and precision to the present research. In particular, the relationships among FS, outdoor education, environmental education, and place-based education are defined and framed from the start.

FS has gained popularity in the UK and other parts of the world. It is based on the principles of child-led learning, nature connection and play and typically takes place in woodland or other natural settings. Outdoor education, on the other hand, is a broader term that encompasses a range of activities and experiences that take place in outdoor environments, including adventure activities, environmental education, and more. Environmental education is a specific type of outdoor education that focuses on teaching about environmental issues and sustainability, while place-based education is an approach that emphasises the connections between learners and the places where they live and learn.

In the context of this thesis, FS is used as a specific example of outdoor education, and the focus is on exploring how inclusive practices can be integrated into FS programmes. This means that the core concepts of FS, outdoor education, environmental education, and place-based education are all relevant and important, but the emphasis is on understanding how they relate to the goal of creating inclusive learning environments. FS (see Chapter 3) is defined as a specific type of outdoor education that emphasises child-led learning, nature connection, and play, and it typically takes place in woodland or other natural settings. This educational approach is characterised by its focus on regular and repeated visits to natural settings, where children engage in experiential learning using natural resources for play and learning activities (Knight 2009; 2013a; 2013b).

In the context of the thesis, inclusive practices can be broadly defined as practices that ensure all learners feel welcome, valued, and supported in their learning. This includes practices that accommodate different learning styles and abilities and practices that promote diversity, equity, and inclusion. In the context of this thesis, the focus is on inclusive practices for learners with SEND, but inclusive practices benefit all learners and should be a goal for all education programmes.

To address the question of why inclusivity is considered only for children with SEND, this thesis focuses on exploring how FS programmes can be made more inclusive for learners with SEND. This is because learners with SEND are often marginalised in traditional education settings and may face barriers to accessing outdoor education programmes. By focusing on this population, the thesis aims to contribute to a more equitable and inclusive education system.

While the findings and implications of the study are based on the experiences of these two participants, this is a qualitative study and the goal is not to generalise findings to a larger population, but rather gain a deeper understanding of the experiences of these learners. The study is also supported by a larger sample of non-disabled participants who provide context and comparison for the experiences of the learners with SEND.

### What is an outdoor education?

McCree (2019) explores common misconceptions about outdoor education, highlighting its holistic nature that combines experiential learning, environmental education, and personal development. Despite its broad scope, stakeholders often confuse outdoor education with adventure programmes or environmental education alone, a misunderstanding addressed by both historical and contemporary studies (Lund, 2002; Lewicki et al., 1998; Swan, 1975). McCree's analysis clarifies the multifaceted nature of outdoor education and the need for a clearer understanding among educators and parents.

Outdoor education highlights the pedagogical importance of the learning environment (Lewicki et al., 1998; Southall, 2014). Outdoor education also considers the learning community, which it places in the centre of the learning experience, and redefines both 'where' and 'how' learning occurs (Lewicki et al. 1998). Outdoor education is, therefore, a holistic approach to education. The outdoor learning approach promotes the development of an individual academically, emotionally, socially, and psychologically. Through outdoor activities and games, the relationship of individuals with their natural environment can be reinforced (Knight, 2011a; Hattie et al., 1997). Perhaps what outdoor education offers the most is opportunities for

connections through interactions between knowledge and reality (Southall, 2014). The possibility for opportunities or connections becomes more apparent when looking at what is happening in an outdoor learning programme. The participants of an outdoor education programme experience things they know about happening right in front of them, in the natural environment, in a multidisciplinary educational approach (Nash, 1976; Hettie et al., 1997). Through such an approach, students learn via a process that redefines where and how one can learn and offers constant opportunities that enable the students and the teachers to evaluate the educational process (Hettie et al., 1997; Lewicki et al., 1998). Traditionally, this process is linked to indoor learning (Smith, 2007). However, the outdoor environment is offered as an alternative educational place that provides a broader spectrum of opportunities for learning (Stavrianos, 2016; Southall, 2014).

Outdoor education developed in the United States of America in the 1920s (Stapp, 1969). Stapp (1969) sees outdoor education as experiential learning (see Chapter 3), which takes in the outdoors, outside the classroom for the outdoors and about the outdoors. It can be directly related to the problem of urbanisation and the increasing deficit of human contact with the natural environment and linked to Deweyan philosophical principles (Dewey, 1897). Notably, this movement highlighted the importance of providing experiential opportunities for children to have first-hand experiences both in the classroom and outside of it. Outdoor education can allow pupils to actively engage in learning activities, in a forest, a park, a beach, and so on (Swan, 1975).

The educational activities in an outdoor education programme can often include a trip based on experience during which pupils take part in challenges of various types and levels. Outdoor education heavily draws on the theory, practices and philosophical principles of experiential learning and environmental education (Priest, 1986). Priest (1986) defined three specific goals of outdoor education (see p. 17). Lund (2002) enriched outdoor education as a learning approach that has the potential to develop survival skills and problem-solving skills, reinforce teamwork and leadership skills, and cultivate our understanding of the natural environment. Also, outdoor education can promote spirituality (Southall, 2014).

Donaldson and Donaldson (2013) suggest that outdoor education can be difficult to define as it varies according to where it is implemented. The reason for this difficulty is multifactorial. Different cultural and/or philosophical assumptions and local conditions influence our interpretation of outdoor education. Hence, its interpretations may vary greatly. For Swan (1975), the factor that primarily distinguishes outdoor education from other learning approaches is that it can apply to all courses. Hence, parents and teachers of adventure programmes or environmental

education frequently mistake outdoor education. What separates those is the element of focus. For example, adventure programmes would focus on the side of adventure or even exploration, while environmental education would mostly focus on the environment or sustainability (Lund, 2002). Outdoor education takes place within nature, and thus it recognises the pedagogical value of the learning environment, the place in which learning occurs. At the same time, outdoor education perceives society as an embedded part of nature and redefines 'where' and 'how' an individual learns (Southall, 2014; Beard, 2015).

In addition, Lund (2002) and Priest (1986) claim that outdoor education benefits the individual learner, the learning team, and the natural environment where learning takes place (Southall, 2014). The focus of those three central areas differs from one programme to another, according to their target goals.



*Figure 1: Outdoor education*

Adding to Lund (2002) and Priest (1986), Higgins and Loynes (1997) claim that outdoor education could be an experiential approach to education that can permeate throughout any subject area. Higgins and Loynes (1997) suggest that outdoor education can also be used to cultivate environmental awareness and personal and social development. Higgins (1997) claims that a teacher in an outdoor education programme can focus on one or more of these core areas in outdoor activities. This view of outdoor education is diagrammed in Figure 1 on p. 13.

## The intentions of outdoor education

Outdoor education's philosophy tends to underline the impact humans have upon the natural environment and vice versa; it is an educative role through activities that highlight the value of educational challenge and experiential learning. When individuals take part in outdoor education, they learn more about themselves and become more capable of learning about others. We can see, therefore, that outdoor education can reinforce team spirit and inclusivity (Cook, 1999) since, in most cases, its participants must function as a whole and trust each other to accomplish team goals (Cook, 1999). Outdoor education is being run in many countries such as Denmark, Norway, and Scotland and can be applied in various ways based on the cultural and social background of the country.

Loynes (2016) suggests that outdoor education is constantly developing as an entertainment park full of experiences and can cultivate the development of creativity and pupils' spontaneous thinking and response. Loynes (2016) also suggests that outdoor education can also boost its participant's self-esteem. School and education, after all, are the institutions that most defines and shapes our children's childhoods (Blundell, 2012). The results that come from outdoor education are clear for those who work in it (Loynes, 2016). Moreover, outdoor education promotes our understanding of the relationship between nature and society, teamwork, and the acquisition of new skills (Hovelynck & Peeters, 2003; Dillon et al., 2005).

In their key findings of a research review, Dillon and Brandt (2006) support the claim that outdoor educational programmes that are designed to maintain a child-centred approach and are approached experientially are effective. The fact that a child-centred experiential approach to learning can be effective derives from various factors. This approach to learning promotes pupils' curiosity and can use exploration and other approaches that stimulate learning and encourage the connection between experience and previous knowledge (Brody, 2005; Lloyd & Gray, 2014). Another factor that can explain the effectiveness of outdoor education lies in the nature of the experience itself (see Chapter 3). This experience can reinforce social skills and be used when pupils are being asked to solve problems and take action (Kellert, 2002). The experiential learning that occurs in outdoor education promotes teamwork, which helps pupils to work together and form relationships with each other. It cultivates sensitivity and awareness towards the creation of environmental consciousness and creates an emotional connection with our natural environment (Dillon et al., 2005).

Drasdo (1973) made a distinction between two approaches when teaching through outdoor activities. The first focus is in the development of physical skills and technical knowledge

was promoted and used by the Councils of Physical Recreation (Drasdo, 1973), and the second uses situations to deal with challenges in the outdoors for the pupils to develop personal skills such as autonomy and leadership skills. A third approach is represented by local authorities' outdoor education centres and volunteer work and organisations that were primarily designed to encourage personal and social development since many outdoor education practitioners consider personal development skills to be at the centre of their work.

Outdoor education is frequently approached with activities that were designed and run to promote educational objectives: knowledge, influence policies, perceptions and behaviours. An outdoor game activity, for example, can include an environmental problem pupils can work on in groups and be asked to solve problems by forming hypotheses and testing them. The need for a widely accepted solution can stimulate a deeper understanding of emerging opinions and can lead to the development of a stronger argument (Chatzigeorgiou, 2004).

Outdoor education involves activities that contribute effectively to the learning process by offering skills and new knowledge through increasing team interactions. The participants of a learning team can test their hypotheses and reflect on their results to convert previous knowledge and experience into a new experience and take an active part in the activity by interacting with other team members and contributing to the common goal. Learning in this context occurs through action and experience. Furthermore, learning in this context is an interactive process, which promotes the development of thinking, emotion, and action in contrast to a more traditional way of learning, which often uses an almost mechanical memorisation process (Brody, 2005).

Even though the child-centred value of outdoor education is recognised (Dillon & Brandt, 2006), the spread of outdoor educational programmes is limited. Factors such as the safety of the pupils and the lack of trained teaching personnel in outdoor education, for example, can lead to disregarding outdoor education as a whole (Farmer et al., 2007).

### Linking outdoor and environmental education

Outdoor and environmental education can approach knowledge through a multidisciplinary, holistic approach, help pupils achieve academically, raise their self-esteem, and promote teamwork between various social groups. An individual's initiative to act to protect the environment, however, should not be the result of a directive instruction but a decision by the individual. A bright, critical thought should lead the individual to choose to act consciously. A condition for the above is the participation of the individual in a learning process that would encourage a dialogue allowing the critical presentation and exploration of all stances and

opinions, the expression of disagreements, doubts, and in many cases even contradictions. This process promotes the deciphering of values, deconstructs stances and opinions and reconstructs them into new ones that are reinforced (Georgopoulos, 2002).

The combination of outdoor education and environmental education connects knowledge with action and promotes experiential learning and active participation of pupils, while it transforms learning into a personal matter through its experiential approach. If pupils manage to accomplish this, then they can achieve active citizenship (Flogaiti, 2011). For Hungerford, Peyton and Wilke (cited in Flogaiti, 2011), environmental education is a process that can help citizens acquire knowledge of the environment and above all help them become capable, determined and willing to work, individually and collaboratively, to achieve and preserve a dynamic balance between quality of life and quality of the environment. Based on this rationale, the main scope of environmental education is the cultivation of environmentally responsible citizens and environmentally responsible social groups.

This rationale is also linked to Hungerford and Volk's (1990) claim that to come closer to a more sustainable society, we ought to first create an education aiming to educate a more environmentally responsible citizen. This citizen would have awareness of and be sensitive towards the environment, understand environmental issues, develop a feeling of care and interest in the environment, and actively participate in the process of solving environmental problems.

Flogaiti (2011) defines an environmentally responsible citizen as someone who possesses a comprehensive understanding of and sensitivity towards environmental issues, grasping the environment's functions and the interconnected challenges it faces. Such a citizen shows a deep commitment to the sustainability and active preservation of the natural world. Furthermore, they are equipped with the skills needed for identifying and addressing environmental problems and are actively engaged in efforts to resolve these issues, demonstrating a proactive approach to environmental stewardship.

From studies about the psychological perspectives of humans in nature that were conducted with urban area residents (Kaplan & Kaplan, 1989; Kaplan, 1995), we know that contact with nature, even though green areas within urban environments, has positive consequences for one's mental and physical health. Other studies regarding the outdoor experiences of young children (Rivkin, 1997) claim that residents of big cities, and especially the children in those cities, need daily contact with nature. Rivkin (1997) supports Kellert and Wilson's (1993) hypothesis of biophilia.

In addition to the biophilia hypothesis (Kellert & Wilson, 1993), during the last decade the level of interest in the use of school gardens for pedagogical reasons has increased, but despite an attempt to include them in the curriculum (Dyment, 2005; Bell, 2016), their use is limited (Mawson, 2014). This limitation might be caused by the fact that outdoor learning practice is not considered to be a real learning practice generally, but also by the fact that exiting the school classroom causes insecurity and uncertainty for the educators (Skamp & Bergmann, 2001).

Even though general knowledge and interest in environmental issues have risen (Chawla & Cushing, 2007), we are still far from environmental education's goal of a sustainable future (Flogaiti, 2011). Outdoor education, however, can dynamically contribute to this by educating pupils within the natural environment in the outdoors. Through this educative process, outdoor education can create a society of environmentally aware individuals who would actively participate in protecting the environment. In other words, sterile knowledge alone is not enough; action and practical training should also be emphasised (Flogaiti, 2011).

The factors that can contribute dynamically to the development of action and the promotion of environmentally friendly behaviours towards the environment vary. Age is one factor that can contribute towards an effective environmental education, and in particular, early childhood and primary school age is thought to have the most significant impact on environmental thinking. This process takes place through personal activities and interaction with nature and the outdoors, as such experiences play a critical role in shaping lifelong attitudes, values, and patterns of behaviour toward natural environments. Importantly, Huynh et al. (2022) highlight the role of cultural ecosystem services in reinforcing the nonmaterial dimensions of human-nature relations and human well-being. By linking these aspects, the study underscores the integral role of cultural experiences and values in fostering a deep, meaningful connection with the environment from a young age. Through engagement with nature that encompasses cultural dimensions, children can develop a more profound and nuanced appreciation of their role in preserving the environment, which is critical for fostering long-term environmentally friendly behaviours (Wilson, 1994; Gambro & Switzky, 1996; Huynh et al., 2022).

Learning through doing is a vital element of experiential education and can be promoted through outdoor education. When children visit the outdoors, they are effortlessly exposed to various stimuli; learning in the outdoors is developed through games and real-life experiences. Outdoor education can offer not only skills and knowledge but also values and therefore helps to promote critical citizens of tomorrow. Bolick et al. (2022) elaborate on this by discussing 'Taking Off the Backpacks: The Transference of Outdoor Experiential Education to the Classroom',

highlighting the significant impact that outdoor experiential education can have when its principles and lessons are integrated into traditional classroom settings. They argue that the skills, values, and perspectives gained from outdoor experiences can enrich the learning environment back in the classroom, providing a holistic approach to education that bridges the gap between experiential learning outdoors and academic learning indoors. This seamless integration fosters a learning culture that values both practical experiences and academic rigour, preparing students to become well-rounded, critical thinkers capable of navigating complex real-world issues (Bolick et al., 2022). This approach is the vital methodology of environmental education and can be accelerated through outdoor activities and games within the natural environment (Georgopoulos, 2002). Szczepanski et al. (2006) have also been supportive of the claim that nature itself can act as a means to pedagogy. In particular, Szczepanski et al. (2006) suggest that teachers ought to understand that nature can be a resourceful tool for education. An outdoor environmental setting can provoke students to achieve an understanding of the mechanisms that take place in nature and the connections between nature and humanity. In addition, Szczepanski et al. (2006) highlight the opportunity for a sensory approach to learning. For Szczepanski et al. (2006), nature can be a means to a pedagogy that allows pupils to use their senses to explore knowledge. Moreover, psychological research highlights the importance of interactive play that influences pedagogy (Hewett and Nind, 1998, in Peter, 2005). However, Szczepanski et al. (2006) highlight the importance of activities that are well-structured and well-organised for pupils to explore nature.

## Outline of the thesis

Chapter 2 discusses the current literature on SEND and the impact of outdoor learning on the learning outcomes of SEND students. The chapter provides an overview of the different SEND categories, the barriers to learning that these students may face, and the different strategies that can be used to support their learning. The chapter also reviews the literature on the benefits of outdoor learning for SEND students, including improvements in social and emotional well-being, self-esteem, communication skills, and academic performance. Finally, the chapter identifies gaps in the literature and highlights the need for further research in this area.

In Chapter 3 of the thesis, "Outdoor education and Forest School", the author provides an overview of outdoor education, its history, and how it has evolved. The author also describes the different types of outdoor education programmes, their goals and objectives, and the role they play in promoting learning and development among students. The chapter explores the benefits of outdoor education, including its potential to improve students' academic performance, social skills, and personal growth.

Additionally, the chapter discusses the challenges and limitations of outdoor education programmes, such as access and inclusion issues, funding constraints, and safety concerns. The author highlights the need for outdoor education programmes to be accessible and inclusive to all students, regardless of their backgrounds or abilities.

Overall, this chapter provides a comprehensive overview of outdoor education, its benefits and limitations, and the factors that contribute to its success or failure. It lays the foundation for the subsequent chapters that explore the impact of an outdoor education programme on students with SEND.

Chapter 4 of the thesis, "Methodology", explains the research design, sampling methods, data collection and analysis techniques used in the study. The chapter starts by providing an overview of the research design and the specific research question that the study seeks to answer. The data collection methods used in the study are also explained in detail. The researcher used a variety of data collection techniques, including surveys, interviews, focus groups and observation. The chapter also provides a detailed description of the data analysis techniques used in the study. The researcher used thematic analysis to identify the key themes and patterns in the data collected from the various sources. The chapter concludes by discussing the ethical considerations of the research process, including obtaining informed consent from the participants and ensuring their anonymity and confidentiality.

Chapter 5 informs the reader of the findings of this research. This chapter presents the findings of the data sets that were collected from the three different research tools. In particular, the chapter presents qualitative data from interviews with teaching staff, qualitative and quantitative data from the questionnaire completed by the parents, and observational data from children, obtained using the LSI. Also, the approach of the data analysis is being presented here.

Chapter 6 is a discussion of the findings from this study. The discussion draws on the three voices that inform the research. The chapter begins by discussing children's involvement, continues by discussing the voices of the teacher, and finally, discusses the voices of the parents. The umbrella themes identified are the impact of outdoor learning sessions on children and the enablers of barriers to FS. Overall, Chapter 6 offers a comprehensive and insightful discussion of the research findings, their implications, and the potential avenues for future research. The author's reflections on the research process and practice recommendations add depth and nuance to the study's conclusions, making this chapter a valuable contribution to the field of outdoor education and inclusive practices.

Finally, Chapter 7 offers concluding reflections on the research. This chapter includes topics such as the contributions to knowledge this research has made, the rationale behind this research approach, the place for this study in the existing research literature, and recommendations emerging from the key findings of the research. In this chapter, the researcher provides a summary of the study, including the research question, methods, and findings. The chapter also discusses the implications of the study's results for the field of outdoor education and for supporting students with SEND. The researcher concludes by reflecting on the limitations of the study and suggesting directions for future research in this area. Finally, the researcher emphasises the importance of inclusive outdoor education for all students, including those with SEND, and calls for continued efforts to improve access to outdoor learning opportunities for all.

## Chapter 2 SEND and learning

### Introduction

National education policies are processed as responses to international influences. The Salamanca Statement (UNESCO, 1994) envisions the diversity of children and emphasises that schools should develop practices that promote the participation of children with or without SEND (Beaton & Spratt, 2019). Education models of education efficiency are based on the 'best usage of resources' (Kauffman, 1989) and involve the labelling and categorisation of children. In contrast, the Salamanca Statement's inclusion approach seeks to reduce labelling and stigma (Opperti & Brady, 2011) and envisions schools as democratic constructs where:

all children learn together and teachers support children in ways that avoid marking some children as different. In this model, the lived experience of schooling and its democratising role are as important as the products of education. (Beaton & Spratt, 2019, p. 72)

For this reason, this chapter introduces the concept of disability, focusing on the educational perspective through the social model for disability. By looking critically at the development, orientation and inclusion of children, the chapter also examines the concepts and practice of SEND.

As training on SEND needs to be strengthened (Peter, 2013) and because pupils stigmatised by the words 'special', 'subnormal' or even 'retarded' have been, for a long time, devalued 'others', the undesirable half of a binary pair (Edgington, 2002), the discussion here maintains a focus on the flexible adaptation of the school's environment and curriculum that could support inclusion (Lloyd, 2008). The chapter continues with a critical consideration of social stigma and labelling, which is linked to the inclusion movement and primarily focuses on the negative effects of labelling (Beaton & Spratt, 2019). This chapter sheds light on the concept of inclusion as envisioned by UNESCO (1994) through a brief introduction of various intelligence theories that suggest that diversity is part of human nature.

### Disability

#### Disability and education

Early in the history of intellectual disability, at the start of the twentieth century, people with such disabilities were labelled 'idiots', 'imbeciles' or 'cretins' (Tharp, 1997; Osterholm et al., 2007). When first used, these labels 'may not have had strong negative connotations, but we all today recognise the devaluation they imply' (Thomson, 2012, p. 160). According to the American

Association on Intellectual and Developmental Disabilities (AAIDD, 2010), intellectual disability (ID) or general learning disability is a generalised disorder that appears before adulthood, affects both intellectual functioning and adaptive behaviour and is characterised by significantly impaired cognitive functioning. ID in the US is also known as mental retardation, although this older term is being used less frequently (Ansberry, 2010). Historically, ID was defined as an intelligence quotient score of under 70 (Tzouriadou, 1995).

Unfortunately, even up to the 1970s, the policy of educating pupils who faced challenges in their learning was one of exclusion. The mainstream rationale for 'helping' and educating children with difficulties was advocating for the creation and maintenance of separate special schools, separate small-sized classes, special teachers, and specialised instructional methods (Bunch, 1994). The language used to describe disability changes according to our thinking of the term (Hedlund, 2000). In turn, this thinking can start from the slightest observation of a feeling, an object or even the observation of a social or natural phenomenon (Derrida, 1982). In England, the term 'special educational needs' (SEN) came into use only after 1960, as a result of the dissatisfaction that emerged through the usage of the terminology mentioned in the 'Handicapped Pupils and School Health Service Regulations' of 1945 (Gulliford & Upton, 2002).

### Recent views on disability

Since the Salamanca Statement (1994), how children with SEN and disability are perceived and included in the educational system and society at large has changed significantly. UNESCO (1994) emphasised that children with SEND must be treated as citizens who enjoy equal rights in education alongside their peers. Diversity, according to this foundational document, should not be viewed as an obstacle to participation in social or environmental activities, nor should it serve as a basis for exclusion from social inquiry (Boutskou, 2007). Building on this paradigm, recent research by Jacob et al. (2022) in 'Strategies for enhancing social skills of individuals with ID: A systematic review,' published in *Frontiers in Rehabilitation Sciences*, provides empirical evidence for and strategic insights into improving the social skills and inclusion of individuals with intellectual disabilities. Their study identifies effective interventions and practices that can be integrated into educational and social settings to foster better social engagement, thereby promoting inclusivity in line with the Salamanca Statement's objectives. Jacob et al. (2022) underline the importance of continuing to develop and implement strategies that not only support the educational needs of children with SEND but also enhance their social skills and opportunities for meaningful participation in society, thus affirming their rights and status as full citizens.

According to the World Health Organization (WHO) (2011), disability is a consequence of an impairment that has to do with an individual's ability to do something. Moreover, the concept of disability for the WHO includes the discrimination to which an individual is exposed as a result of their inability to act in a certain way and is viewed as a natural consequence of their impairment (Krahn, 2011). Disability for the WHO is, therefore, not only a health problem but also a multivariable phenomenon that reflects the interaction between features of a person's physiology and features of the society in which he or she lives.

Overcoming the difficulties faced by people with disabilities requires interventions to remove environmental and social barriers (WHO, 2011). However, defining disability at its core is problematic because the term has a non-simple conceptual explanation (Sadock & Sadock, 2011).

In the past, Hunt (1966) stated that a disability is not only a person's functional limitation, but mainly the relationship between disabled and non-disabled people, arguing that people with disabilities 'provoke' negative societal interactions because of the special position they are in. This 'challenge', according to Hunt, is usually interpreted in the following words non-disabled persons use to describe disabled persons: 'Unfortunate, useless, different, minority group members and sick' (Hunt, 1966, p. 3). Barnes (1992), addressing representations of the concept of disability, distinguished ten types of disabled persons, as shown in all forms of the British media: pathetic and passive victims of violent behaviour, vicious and evil, curiosities, super-disabled, subjects of ridicule, hostile, intrusive, sexually perverted, unable to participate fully in community life, and finally some cases appeared as 'normal'. For Barnes (1992), these depictions are stereotypes that medicalise, patronise, criminalise, and dehumanise disabled people and form the basis on which the attitudes, assumptions and expectations toward these individuals are built. These depictions are fundamental to the discrimination and exploitation to which disabled people are exposed, daily. Moreover, for Barnes (1992), these stereotypical depictions of the concept of disability also significantly contribute to the systematic exclusion of a disabled person from societal activities.

The terminology of disability is explained with either a bio-medical model or a social model. The first defines disability by emphasising the pathology and the anatomy of the impairment, while the second approaches disability by emphasising the difficulties a person experiences (Panagiotou et al., 2008, p. 6). Moreover, within the social model, 'disability demands a political response since the problem is created by an unaccommodating physical environment brought about by attitudes and other features of the social environment' (WHO, 2005, p. 9; Goering, 2015).

Alternative definitions for the term 'disability', according to Danilopoulos (2003), are derived from the perspective we choose to use each time. This perspective marks the relation of individuals with binary codes in which disability represents fewer opportunities because of the person's medical, physical, mental or other condition. This difference in opportunities has been approached through various systems that Danilopoulos (2003) summarises in the table below:

*Table 1: Models of disability adopted from Danilopoulos, 2003*

<b>Perspective</b>	<b>The system of approaching disability</b>	<b>Binary codes/dualisms</b>
Medical model	Sickness, dysfunction, impairment, deficiency	-Health -Sickness
Economic model	Deficiency of funds, poverty, failure to pay	-Ability to pay -Inability to pay
Labour market system	Labour inability, weakness in engaging in profitable activity	-Ability to work -Inability to work
Law system	Legal disability, lack of rights or obligations	-Logic -Irresponsibility
Recovery system	Support or restoration of functional abilities	-Ability to function -Inability to function
Educational system	Learning difficulties, low educational level	-Trainable -Not trainable

Each of these observational perspectives describes individual features of persons with disabilities, ignoring any characteristics that do not match the system of the perspective used (Danilopoulos, 2003).

'How a society defines disability and whom it recognises as disabled are of enormous psychological, social, economic and political importance, both to people who identify themselves as disabled and to those who do not but are nevertheless given the label' (Wendell, 1996 p.32).

Drawing on Wendell (1996), Goodley (2014) suggests an ontological turn in disability studies as a rejection of the assumption of an automatic or necessary division between the natural

and the social (Cluley et al., 2019, p. 2). Cluley et al. argue that each theory or model of disability constructs terminology that refers to disability according to the model or theory used. This ontological turn takes disability studies into the twenty-first century (Cluley et al. 2019) and originates in the development of cultural anthropology and the rejection of the idea that culture is singular (Palecek, 2020).

The medical model of disability initially dominated special education. The medical model of disability identifies deficits within the individual and sees them as a victim with an illness that needs to be cured (Tomlinson, 2005). Skidmore (2004, p.113) calls the approach of the medical model towards disability a 'discourse of deviance'. According to Skidmore (2004), this discourse constructs a notion of normality or abnormality and divides the students into two main categories, those with SEND and those without. Hence the medical model creates an illusion. According to the medical model of disability, some children belong to certain places of expertise.

Thomas (2006) highlights the three movements that gave rise to special education: eugenics, psychometrics and scientism. All of the previous movements aligned with the medical model of disability in the sense that they characterised individuals as defectives who cannot excel and/or do not deserve to thrive in mainstream society including mainstream schools. Eugenics (Galton, 1869) became obsessed with the elimination of the 'defectives' and created a notion that persons with disabilities should not be given the chance to participate in mainstream society. Hence, the segregation of children with disabilities, blind, deaf or 'ineducable' children began (Quicke et al., 1990). In the same spirit, IQ testing created a notion of a sub-class of children: 'the intellectually disabled'. Lastly, positivism values measurable objective knowledge over qualitative subjective knowledge (Qu, 2020). Qu (2020, p.5) claims that positivism often resulted in "seeing children with SEND as needing certain expertise outside mainstream schools' capacity and therefore necessitating segregated provisions". In contrast, the notion of inclusive education was based on rights and social models. These models emerged concerning people with disabilities and view disability as a socially constructed concept in which society either enables or disables an individual (Qu, 2020). The disabling factors the social model of disability identifies can include prejudice, exclusion from social contexts and discrimination. Hence the social model of disability targets people with disabilities to be valued as participating citizens with equal rights and dignity as their peers. The vision of the social model was confirmed in the Incheon Declaration at the World Education Forum (UNESCO, 2015). The World Education Forum acknowledged education and development to be 'based on human rights and dignity; social justice; inclusion; protection;

cultural, linguistic and ethnic diversity; and shared responsibility and accountability' (UNESCO, 2021, p. 6).

The Relational Model of Disability originates from the Swedish social theorist Nirje (1969; Oliver, 1994) who based disability on the principles of normalisation. Nirje emphasised deinstitutionalisation and the recognition of diversity in the human condition. Following Nirje's (1994) work, Goodley (2014), a UK-based scholar in the field of critical disability studies, identified the Relational Model of Disability. The Relational Model of Disability acknowledges that disability is a person-environment mismatch. Hence, disability is therefore situational (contextual) and relative (Goodley, 2014). Perhaps the previous model can explain to some extent why Nordic-Scandinavian countries are considered to build environment accessibility policy (Lawson & Beckett, 2021).

The Diversity Model of Disability emerged in the USA by Shriner and Scotch (1997), who advocated for an alternative view of Bickenbach et al.'s (1999) justice of disadvantaged minorities and questioned the socio-political definition of disability. Shriner and Scotch (1997) saw disability as a 'Human Variation'. Under this model of disability, accessibility is not solely achieved by mere antidiscrimination regulations but rather requires a more universal solution through which all exclusion factors can be removed. A universal solution to disability would shift the focus of special responses to special needs to an approach to disability that would accept differences and widen the range of normal. Notably, this model of disability has been explored by interdisciplinary scholars (e.g., Hamraie, 2016) who bring together the notions of feminist studies, science and technology with critical disability studies to underpin built environment theory and practice to facilitate a 'normate template' to 'foreground the political, cultural, and social value of disability embodiments' (Hamraie, 2006, p. 304).

The Human Rights Model of Disability originates from the UN Universal Declaration of Human Rights, which was adopted by the UN in 1948 (Laws, 2018) and continues to evolve (Lawson & Beckett, 2020) after the 2006 United Nations Convention on the Rights of Persons with Disabilities. The Human Rights Model of Disability advocates in favour of the need for legislative declarations that arise in response to power imbalances of marginalised groups that exclude persons with disability from fully participating in all aspects of life. The Human Rights Model of Disability also advocates in favour of deinstitutionalisation, welfare policy and 'rights-based assessments' concerning future independent living. Content in this context is informed by socio-political movements (Lawson & Beckett, 2020). However, the Human Rights Model of Disability has been critiqued for becoming narrowly defined since it could highlight the power of

the environment over people's lives as the environment in this context segregates through individualised planning and designing mechanisms. Furthermore, the environment in this context is seen as a human rights problem (Degener, 2016). Apart from critiques regarding legislative bodies driven by socio-political movements, the Human Rights model of Disability is also seen to "prioritise personal protection and safeguard rather than being the tool to precipitate enabling environments" (Berghs et al., 2016, p.4).

Another model of disability is the identity or the 'affirmation' model of disability (Swain & French, 2000). The affirmation model of disability shares the social model's understanding of disability to some extent as it recognises that the experience of disability is socially constructed. However, the affirmation model acknowledges that disability offers "a positive identity" (Brewer et al., 2012, p.5). According to Brewer et al. (2012), the affirmation model

*is a marker of membership in a minority identity, much like gender or race...Under an identity model, disability is primarily defined by a certain type of experience in the world – a social and political experience of the effects of a social system not designed with disabled people in mind...[W]hile the identity model owes much to the social model, it is less interested in the ways environments, policies, and institutions disable people, and more interested in forging a positive definition of disability identity based on experiences and circumstances that have created a recognizable minority group called 'people with disabilities'.*

The identity of persons with disabilities, according to this model, is shaped by an acknowledgement of the socially constructed aspect of disability and also by motivating persons with disability to belong to a group that promotes the development of a collective identity (Swain & French, 2000). Darling and Heckert (2010, p.207) claim that the identity model of disability has inspired persons with disabilities to adopt a more positive self-image that emphasises 'disability pride'. The affirmation model suggests that "there is nothing wrong with people with disabilities" (Retief & Letšosa, 2018, p.5). Hence in this context, people with disabilities can either identify as 'outsiders' or as 'insiders' if they choose to. Notably, the group identified that the affirmation model has inspired persons with disability to envision 'change, often under the flags of "civil rights" and "equal opportunities"' (Retief & Letšosa, 2018, p.5).

Despite the above, the affirmation model has been severely critiqued as it compels individuals to identify with a sub-culture (Fraser, 2003). At the same time, when people with disabilities self-identify as 'outsiders' the model seems to negate the social struggle for social

justice and redistribution of resources as it fails to pay enough attention to the inequalities people with disabilities face in their daily lives (Fraser, 2003).

Another noticeable model of disability is normalisation, the predecessor of the social role valorisation (SRV) model of disability. The model of normalisation emphasises a normative theory to change negative perceptions and treatment of people with intellectual disabilities and originates from school sociology concerning labelling or deviance (Flynn & Lemay, 1999). This model arose in the 1960s and was the dominant theoretical framework until the 1990s for policymaking regarding intellectually disabled people (Stalker & McArthur, 2012). The ideology behind the normalisation principle lies in a common normative behavioural denominator between humans. Therefore, according to this principle, people with disabilities should receive help to reach this common denominator and 'be like everyone else' (Gilor & Katz, 2019). In this context, people with an ID are "basically the same as those of ordinary people, with the difference that they may not be able to meet these needs unaided or as independently as other people can" (Thomas, 1987, p. 129). According to the normalisation model, people with intellectual disabilities are being oppressed and marginalised as a social group. Furthermore, people with intellectual disabilities follow a self-fulfilling prophecy by perpetuating a negative self and society image. Hence, they often occupy devalued roles (Davidson, 2012). Therefore, the normalisation model suggests that by changing negative perceptions and discriminatory practices, people with intellectual disabilities will be able to break this vicious circle and occupy socially valued roles.

The theoretical difficulties of the normalisation model of disability lie in its realist ontological understanding of impairment (Thomas, 2006). Thomas (2006) claims that many poststructuralists who drew from Foucault demanded "the reformulation of 'impairment' in purely socio-cultural terms" (Thomas, 2006, p.180). In this aspect of the model of normalisation, governmental practices are being inducted and divided from others and produce the illusion that people with disabilities have a natural impairment (Tremain, 2005). Similarly, Yates et al. (2008) disregard normalisation or SRV as a coherent theoretical framework as it "founders on an unexamined and problematic individual-society dualism and the (hidden but implied) notion of the individual with impairments existing before socialization" (Yates et al., 2008, p. 248).

A notion for personalised education for people with disabilities emphasising the concept of social justice emerged when policies for inclusion called for public investments to correct imbalances in access to quality services and productive and political resources since the 1990s (Wilberforce et al., 2011). These policies incorporated educational (Davidson, 2012), economic

and social dimensions and implied a shift between residential towards individualised care and education in deinstitutionalised settings (Dursin et al., 2019).

The personalisation 'model' draws heavily on citizen participation theory (Cogan & Sharpe, 1986) and aims to contribute to social justice in general and enable people with disabilities to exercise their rights and enjoy every aspect of life. This approach views disability as an aspect of social diversity and in this regard, the personalisation approach acknowledges that equality can be realised when the rights of people with disabilities can be applied (Harpur, 2012). The policies involved in the personalisation agenda focus on active citizenship (see Chapter 1, p. 16) and react to restrictions people with disabilities face in autonomy and in raising their voices (Dursin et al., 2019).

In the UK, personalisation was introduced by the then-Education Minister, David Miliband and was welcomed in conjunction with the Every Child Matters agenda (Fielding, 2008). Personalisation raises the importance of the 'student voice' in personalised learning and requires educational stakeholders to pay attention to the concerns of the students in a wide range that concerns their educational settings including their well-being, the direction of their learning, and its style, topic and pace (Fielding, 2008). Fielding (2012) critiques individualised learning and urges educators to disregard instrumentalist market versions of personalisation. In contrast, Fielding (2012, p.82) sees schools as "agents of democratic fellowship". According to Fielding (2012), educators should view personalisation as the building of relationships in which participation through belonging and collaboration is needed for all students to reach a "collective knowledge" (Fielding, 2012, p.82).

Personalisation in educational settings has been heavily critiqued. The criticisms regarding policies of personalisation for people with disabilities have been heavily critiqued. Dursin et al. (2019, p. 6) argue that the criticisms of personalisation policies regard "the envisaged deinstitutionalisation and social integration through the promotion of autonomy and independence as an expression of the social justice character of the policies". At first glance, personalisation policy reforms give the illusion of 'produced' citizens who fulfil their desires (Bondi, 2005; Roets et al. 2020). Spandler (2004) also notes that an autonomous citizen who can exercise personal choice is an illusion in terms of empowerment. Baxter and Glending (2011) raise another critique, noting that physical inclusion does not necessarily translate to recognition and respect in social interactions. Regarding personalisation policies, Chowdhury and Benson (2011) consider the risk of exclusion that people with disabilities can face when they are 'controlled' individually by a service provider. Moreover, Ferguson and Nusbaum (2012) argue that concerning the economic

aspect of the personalisation policies, more than just the reallocation of funds is needed for all people with disabilities to receive personal and meaningful treatment. According to Walker (2006), what is needed is the relationship between the available resources and our ability to convert them into valued capabilities. Furthermore, Walker (2006) asserts that opportunities must be provided for individuals to inform the outcomes of their choices.

The ideology behind personalisation could be filtered through a capabilities approach that has the potential to provide a framework for social, political, and economic limitations that influence well-being (Alkire and Deneulin, 2009; Robeyns, 2003). For Ricoeur (2005), a 'capable' individual must be able 'to speak, to act and to tell'. Behind Ricoeur's (2005) concept of a capable human being lies active participation in society as it is the essential dimension of any capability perspective. Active participation is a needed agency for one to have a voice and take part in any decision-making (Deneulin and Shahani, 2009). Furthermore, active participation is the foundation for any knowledge construction. Ricoeur (2006, p.18) defines capability as "the power to cause something to happen, a power that is liable to self-recognition". Furthermore, according to Davidson (2012), self-recognition is linked to self-esteem and the interactions of people with others. Hence, interpersonal relationships cause people to become 'capable' of an agency they are confident to use.

### Social versus medical: the dualism of disability and their influence on education

How language and communication are made crucially sensible to disability is a topic discussed by many theorists of disability studies. The theoretical analysis of the overall social dialogue on disability issues, according to Michael Oliver (1990; 1996), is a result of the culture of competence developed within the context of the capitalistic Western society. The way we think about disability is thus dependent on the context and language we use to describe it.

By emphasising collective cultural representations of public disputes on disability, the approach of the social model of disability escaped the interpretative dimension of the body, relegating the importance of the body as a component of the analysis (Hughes, 2004). The intersection of historical materialism, as reflected in the early works of Oliver (1990) with the collective consciousness of the individual to work Durkheim (1933) and the poststructuralist approach of Jodelet (1991) and Foucault (1972; 1973a; 1973b; 1987), broadened the horizons of the social model, and the disabled person is now part of the social process of the production of meanings. On the one hand, individuals are recognised as the offsprings of their society (Jodelet, 1991; Oliver, 1990), and on the other, the work of Foucault turns our attention to how the dominant discourse on classifications of disability appears to disabled people as a result of authoritarian

mechanisms of oppression. This viewpoint acted as a catalyst in the social construction of disability as interpreted by theorists of the social model in the poststructuralist era (Watson et al., 2001).

The gap between inclusion and exclusion can be examined if we discover where disability lies. This question involves whether the disability is within individuals or society. This debate derives from the adoption of either the medical or the social model of disability. Social inclusion, as a result, inclusion in mainstream schools is a social response to the medicalisation of disability (Cigman, 2012). The Disability Rights Commission (2005) stated that the disability is not within the child and its impairment, but in the social and attitudinal disablers in education. The UNESCO (1994) Salamanca conference advocated the adoption of inclusive education (see Chapter 3). Inclusion in education is a rationale to accommodate children with disabilities within mainstream education settings or even as a set of reforms that welcome diversity for all pupils (Huijts et al., 2017). As such, however, it inevitably aims to eliminate social exclusion, which is a consequence of responses to a diversity of the ability of pupils to learn as well (Vitello & Mithaug, 2013). Therefore, inclusion begins from the belief that education is a basic human right and sets the basis for a more just society (Ainscow & Cesar, 2006).

The UNESCO Salamanca Statement (1994) highlights the beginning of the shift from a medical model of disability towards a social model of disability and is also about social equity and social justice. Notably, the social model of disability suggests that disability originates from the way society is organised. In contrast, the medical model of disability suggests that disability originates from the impairments or differences of the people (Kent et al., 2019). The Salamanca Statement (UNESCO, 1994) defines inclusion as the right of every child to participate, just like their peers, in education. This perception of inclusion led to an international inclusion movement that aimed to place SEND pupils in mainstream schools (Clark et al., 2018). The justification for the necessity of the adoption of the social model for this process, however, is still confusing, as much criticism (Norwich, 1996; Cigman, 2012; Ainscow et al., 2014) has been made of the social model of disability as well. This criticism can also derive even from people with disabilities. In 2007, for example, Lord Low (2007, in Cigman et al., 2010), who has a visual impairment, argued that 'If education is about anything, it is about influencing and indeed changing the individual child. One may do this by modifying the social environments in which the child is placed, but one cannot eliminate the individual dimension' (2010, p. 9). Norwich (1996) has also criticised the social model of disability and made a strong case against the full adoption of the social model versus the medical model of disability by stating that 'it is one thing to attribute the disadvantage of a

disabled person only to individual characteristics, it is quite another to exclude the role of individual characteristics' (1996, p. 27).

Cigman (2010) considers the exclusion of either the medical or the social model for disability responsible for discrimination against disabled people. The adoption of any model of disability lies in the definition of disability itself: whether disability is seen as an attribute located primarily within a person or as an attribute aroused in an individual from the external environment (Young, 2010). If kinetic disability, for example, in the case of elderly people who face problems climbing stairs, is caused not just by difficulty in walking but also by having many steps into buildings and no alternative pathways that do not include many steps or stairs, through the sole perspective of the medical model, then 'the disabled elderly' can be seen as a minority group in disadvantage (Young, 2010). Hence, the exclusive adoption of either model can extend to concerns of social constructions of oppression and discrimination (Young, 2010).

Furthermore, the idea that the medical and social models of disability are mutually exclusive persists and creates a dualism on where to place children with disabilities for their education. Schools are seen as exclusive or inclusive of children in the same way as disability models can either be medical or social. This idea, therefore, suggests that inclusion can be seen as a polarity between types of schools. Even though the polarity can be broken down to some extent with special units operating within mainstream schools, the idea that children should attend either a mainstream or a special school arose from the debate of the previous models (Cigman, 2012). The next section of the chapter discusses the concept of disability and critically examines the practice of SEND that can promote inclusion (Lloyd, 2008).

### Special educational needs and/or disability

Runswick-Cole and Hodge (2009, p.200) clarify that in England, the designation 'SEND' is assigned to children whose learning challenges are significant enough to require specialised educational interventions. This classification encompasses children who:

1. Face learning difficulties substantially greater than those encountered by their age-matched peers.
2. Have disabilities that inhibit or restrict their use of educational resources that are generally accessible to children of the same age within their local educational authority.
3. Fall below the compulsory school age yet qualify under the conditions mentioned in (a) or (b) or would qualify if specialised educational support were not provided.

This framework, as outlined by the Department of Education in 2015, aims to ensure that all children receive the support necessary for their educational journey, acknowledging the diverse needs and challenges they may face.

In every age, the dominant group in society, depending on its interests, treats people with disabilities differently. Special care for people with disabilities has gone through several stages of development. These include, amongst others, infanticide, torture, whipping, beatings, abandonment, isolation, institutions, prisons, asylums, experiments and even ridicule, exploitation, charity, mercy, protection, and care (Barnes, 1996; Stamatina, 2010).

### Labelling and stigma

Runswick-Cole and Hoge (2009), concurring with Thomson (2012, p.1), claim that “the use of categorical labels” has stimulated debate and concerns “throughout the history of special education”. Gove (1975, p.7) defines labelling as ‘the attachment of a deviant name to some action or attribute(s) of an individual’. The term is derived from social labelling theory, and we can see two distinguished stages in the model: the process that results in labelling and the consequences of labelling (Gove, 1975). Labelling also “identifies individuals or groups according to a category assigned to them” (Smith & Luckasson, 1992b, p. 31). It can be formal, hence imposed by an authority, or informal, imposed by other children, for example, in the playground.

Consequently, once labelled, the individual suffers the often-debilitating consequences of the label. Kuther (1994) observes that the label imposes a negative status on an individual and that labels entail that the identity assigned to a person is to some degree altered to his or her discredit. Moreover, many researchers (Mercer, 1973; Cohen, 1976; Söder 1990; Osterholm et al., 2007) argue that when a label is imposed, the labelled person is practically stereotyped and grouped with others instead of being treated as an individual. When we use such terminology, consistency can be brought to both research and practice within disabilities. However, the use of such terminology can be identified as labelling in some fields, which in turn isolates and stigmatises individuals. Smith and Luckasson (1992a) and McDevitt and Ormrod (2008) consider labelling unrelated to instructional needs. Hence, current systems of classification are not reliable.

Thomson (2012) argues that labelling in SEND contributes to education with “specialised knowledge, values and procedures for individualising educational programmes for individual children whatever their special needs” (Thomson, 2012, p.5). Labelling has been called inevitable (Thomson, 2012), while the process of identifying and classifying pupils as ‘special’ inexorably leads to the affiliation of these pupils to a category of disabilities, and therefore to labelling. “The

use of categorical labels has raised and still is raising, disputes in education and psychology” (Thomson, 2012, p.5). Even though the “literature in the special education field recognises and differentiates classification from labelling” (Thomson, 2012, p.5), in many cases, labelling has been associated with the process of defining a disability (Smith & Luckasson, 1992b).

A noteworthy categorisation result is ability grouping. The notion of grouping pupils of a particular ability is not something new. This system, for example, practised in schools as a form of segregated provision based on previous performance has generated much debate internationally (cf. Kulik & Kulik, 1984; Hallahan & Kauffman, 1994; Edwards, 2006; Rubin, 2006). The “dominance of the ability narrative within education policy and school systems has been built upon the reification of an intangible quality” (Hamilton & O’Hara, 2011, p. 3).

Thomson (2012, p. 159) carries on the discussion, claiming that:

*a classification system enables practitioners to name disabilities, to differentiate them from one another and to communicate in a meaningful and efficient way about a specific disability it helps in forming special interest groups to lobby for improved services and promote attitudes.*

However, for “a classification system to be useful”, Thomson (2012, p. 159) suggests that it should meet four criteria: 1) reliability, 2) coverage, 3) rationalised, and 4) clinical utility.

Another “interesting aspect of classifying and labelling is presented by the National Association of School Psychologists” (Thomson, 2012, p. 163). While NASP “recognises the need for fairness in the provision of educational services to all children”, it also acknowledges the importance of recognising individual differences, while “designing instruction and school programmes” (NASP, in Thomson, 2012, p. 163). Fairbanks (1992) however, described three major problematic aspects of categorising and labelling: 1) labels are negative in their depiction of deficits; 2) labels ultimately become the defining characteristic of the person and therefore, deny their whole complex; and 3) the use of labels and categories for identifying ‘special education needs’ fails to locate failure properly in the education system.

In the UK, the Individuals with Disabilities Education Act in 2004 had a significant role in changing the terminology in special education. Contemporary thinking was reflected in replacing all references to ‘handicapped children’” (Thomson, 2012, p. 160), with ‘individuals with disabilities’ signifying the difference between limitations imposed by society (handicap) and an inability to do certain things (disability).

The term 'with disabilities' indicates that the individual is considered to come first and the disabling condition is only one of their characteristics. Hence, in many fields of special education, "children, youth and adults are described as individuals who have a certain disability" (Council of Exceptional Children, 1991, in Thomson, 2012).

### Self-esteem and social stigma

The language we use to describe a phenomenon affects our view of it:

*The continued use of labels tends to rigidify the thinking of educators concerning the significance and purpose of special education. Words such as 'defective', 'disabled', 'retarded', 'impaired', 'disturbed' and 'disordered', when attached to children with special needs, are stigmatic labels that produce unfortunate results in both the children and in the community's attitudes towards the children (Osterhom et al., 2007, in Thomson, 2012, p. 162).*

Many of the previous classifications were oriented to the aetiology or the prognosis of a disability rather than to the pupil's educational needs (Thomson, 2012).

In previous years, the word 'stigma' was mainly associated with some diseases and the characteristics and behaviours that accompany them, which raise prejudices against persons suffering from them (Andreou, 2004 ). In the twentieth century, Goffman (1963) defined stigma as an unwanted defamatory property that deprives someone of the right to full social acceptance. The word 'stigma' is the Greek word for 'sign': a sign by which society separates those it wants to discredit. It can mean anything that causes shame or social condemnation (Babiniotis, 2002).

The consequences of stigma are social (unfair treatment and discrimination) (Andreou, 2004). Schulze and Angermeyer (2003) identified four dimensions of stigma:

1. about interpersonal relationships (limiting social contacts)
2. about social perceptions of mental illness as perceived by the media
3. about social structures and political decisions
4. about the accessibility of different social roles

These consequences are considered to be primarily negative social cognitive structures which predetermine our behaviour. Moreover, they are a set of (usually negative) discriminatory traits to members of a class of persons (Anagnostopoulos & Soumaki, 2011).

## Self-esteem

Rogers (1995) defines the self as one's experience or image of oneself. This experience or image is developed through one's "interaction with others. In the first psychology textbook, in 1890, William James used the term 'empirical self' to refer to all of the various ways in which people think about themselves" (James, 1890, in Thomson, 2012, p. 160). Richard Lavoie (2003) confirms that "there is a dynamic relationship between self-esteem and skill development. As a child improves in self-esteem, its academic competence increases and vice versa as that competence increases, its self-esteem improves" (Thomson, 2012, p. 160). Thomson's (2012) claim is also in line with Bandura's (2010) self-efficacy theory, which suggests that believing in one's ability can influence events that affect one's life and control the way these events are experienced (Bandura, 2010).

Self-esteem has significant importance for pupils with disabilities since self-assessment of this concept requires the ability to evaluate and compare observable behaviours from the perspective of the student. Usually, pupils with high self-esteem feel capable of influencing another's opinion or behaviour. Moreover, pupils with high self-esteem can communicate feelings and emotions and communicate positive feelings about themselves. On the one hand, self-esteem can be seen as a congruency between a person's real and ideal selves (Pocius, 1995), while on the other (Leary & Downs, 1995), people seek high self-esteem because it facilitates achievement. In addition, self-esteem can also be seen as a psychological measurement "that monitors the quality of people's relationships with others" (Thomson, 2012, p. 160) (cf. Leary & Downs, 1995; Leary, 1999; Leary & Baumeister, 2000). Self-esteem is lowered by repeated failure, rejection and other factors that have negative implications for the relational evaluation of oneself (Thomson, 2012). "Low self-esteem is related to psychological difficulties, and personal problems including depression, loneliness, behavioural disorders and academic failure" (Osterholm et al., in Thomson, 2012, p. 161). Moreover, Thomson (2012, p.161) continues that "most labels associated with special education are used in demeaning ways and imprecise descriptions of need", sometimes these labels are assigned incorrectly: They may not result in the student getting the appropriate services, and once implemented, they are difficult to remove (Kauffman & Pullen, 1996).

Baumeister (1999) and Baumeister and Sommer (2002) suggest that teachers should pursue positive self-esteem. Inclusive practices can decrease social stigmas and improve academic achievement for numerous pupils (Rainforth & York-Barr, 1997). Neil Humphrey (2004) provided some insight into the broader role of self-esteem in the facilitation of inclusive

educational practice. Such a practice emphasises the children's talents and abilities and not their disability or conditions that are different or sensitive in their case (Lavoie, 2003; Thomson, 2012). Hence, teachers must act as "talent scouts" (Thomson, 2012, p. 164) and demonstrate acceptance for the isolated or rejected child. Educational systems are decisive factors that create and maintain conditions for promoting labelling about disability (Slee & Rigby, 1993). Labelling is believed to be detrimental to self-esteem and self-concept (Slee & Rigby, 1993; Osterholm et al. in Thomson, 2012).

## Labelling in SEND

The "label or category of 'special education needs' for example, results in a resource-driven approach to educating the disabled" (Thomson, 2012, p.160). New labels and "new disabilities are constantly being created while pupils continue to be blamed for their disabilities" (Thomson, 2012, p.160).

Apart from one's self-esteem, labelling is thought to damage one's motivation to learn (Kauffman & Hallahan, 1994). Furthermore, labelling is believed to be a factor that results in others (teachers and peers) viewing the labelled student negatively (Stainback & Stainback, 1984). Will (1986, p. 412) claims "that the language" and "the terminology employed" in labelling is "full of separation, fragmentation" and "removal", therefore "functioning to alienate and make passive parents and pupils".

Thomson (2012, p. 162) reports the following three ways in which the imposition of a negative label on an individual alters his or her behaviour:

1. *When labels are assigned, patterns of social interaction are changed.*
2. *The labelling of deviance pushes people to the periphery of others.*
3. *An individual who has acquired the classification of deviant gradually conforms to characteristics of the label (or society's expectations) resulting in a self-fulfilling prophecy.*

Students labelled with disabilities are perceived as 'others' and are very often denied membership in their community (Pfeiffer, 2000). Marks and Louis (1997) agree with Lee and Marks (1994, p.73) and claim that with the resultant dichotomisation of society "into 'us' and 'them', persons with a disability, the 'undesirable half of a binary pair', are 'othered', devalued, given deviant status, and believed to be in need of normalisation". Labels can be harmful when, as a result, individuals are degraded or discriminated against (Thomson, 2012). They can be useful, however, as many special education professionals argue, in the ways that classification can be helpful, for example, by providing a common language for both specialists and laypersons

to describe a disability. Labelling can also be valuable when pupils are classified into a category for treatment and educational purposes (Thomson, 2012).

## Being included

Inclusion is a much-debated concept by educational stakeholders in terms of its meaning, use and understanding in educational settings. Notably, the inclusion movement (see p. 34) provided a forum for the development of a culture of acceptance of students with difficulties in schools across Europe (European Commission, 2012; Bartolo, 2010). On the one hand, UNESCO (2009) identifies inclusion as 'an ongoing process' that aims to offer quality education for all students, while at the same time, inclusion respects the diversity and the different cultural, academic and social backgrounds of every student. On the other hand, an inclusive education should respect the various learning expectations of the students while giving access to the curriculum to all of them. According to the United Nations, inclusion should eliminate all forms of discrimination in schools (UNESCO, 2009). The UN's definition of inclusion in educational settings was enriched with the principles of equity, social justice and participation (Essex et al., 2019). In addition, however, inclusion was linked to equity so that "all individuals reach at least a basic minimum of skills" (OECD, 2013 p.15). Kyriacou (2013) suggest that inclusion is addressed by a narrower idea by many teachers.

For many educational practitioners, the concept of inclusion is limited to a way of placing pupils with SEND in mainstream classrooms without paying much attention to the necessary conditions for the accommodation of the individual needs of such pupils in the life of the school (Kyriakou et al., 2013). Further critical academic research by Raffo and Gunter (2008) advocates in favour of inclusion as a political stance. For Kyriakou et al. (2013), inclusion has the potential to deliver social justice. In the same spirit, Raffo and Gunter (2008) view schools as institutions that have the potential to mediate wider social inequalities so that pupils with learning difficulties and/or pupils coming from disadvantaged economic backgrounds, can benefit from inclusive education practices, in their academic achievements and well-being. Common ground between the perspectives regarding inclusion seems to lie across the practices used to deliver inclusion. Inclusion seems to promote education for all students by addressing improvements in learning practices used within educational settings.

The notions of inclusion and inclusive education do not have single unitary definitions (Graham and Slee, 2006; Norwich, 2008a; 2008b). Broadly, inclusion considers all learners and has been defined as "a process of addressing and responding to the diversity of needs of all learners through increasing participation in learning, cultures and communities and reducing

exclusion within and from education” (UNESCO, 2005, p.13). This indicates that inclusion identifies and removes “all forms of oppression” and promotes participation and the acceptance of difference with dignity as fundamental values in society (Barton & Armstrong, 1999). In a narrower sense, inclusive education originates from special needs education (UNESCO, 2014). It suggests that “all students being educated where they would be educated if they did not have a disability with necessary supports provided to students, educators and families so that all can be successful” (Dukes & Lamar-Dukes, 2006, p.4). Inclusive education highlights the need for mainstream schools to be accessible for all children, including children with disabilities, in a way that supports the children’s physical attendance and active participation (Booth, 2011; Ainscow, 2013; Hornby, 2015). For the scope of this study, this thesis accepts the notions of inclusion and inclusive education in the narrow sense presented above but does not reject their broad meaning. In addition, this thesis accepts that inclusion is linked to a sense of belonging and a sense of security, of being a part of something and mattering to others and nearby society.

Children with SEND (Frederickson & Cline, 2009) “have learning difficulties or disabilities that make it harder for them to learn than most children of the same age do” (Runswick-Cole & Hodge, 2009, p.200). Achievement occurs through a continuum, and children have different paces of learning and achieving. Some children learn to read faster than others; some learn music faster than others. Children differ in when they learn. However, if a child does not make adequate progress toward their educational goals for an extended period, they can be referred for a SEND assessment.

### **Inclusive practice through the Leuven Scale of Involvement**

Inclusive practice in the study is defined and measured based on children’s involvement and engagement scores. Inclusive practice is a critical aspect of providing high-quality education for all children, irrespective of their unique abilities, cultural backgrounds, or family circumstances (UNESCO, 2021). Evaluating children's involvement and engagement in the learning process is an effective approach to assessing the effectiveness of inclusive practices. The LSI is a widely used tool for measuring children's participation in educational settings (Vanderfaellie, De Fraine, & Onghena, 2015).

Inclusive practice is about providing equal opportunities for all children to learn and develop in an environment that recognises and values diversity (Pivik, McComas, & Laflamme, 2019). It involves providing a range of experiences that cater to the individual needs, abilities, and interests of children, fostering their sense of belonging and connectedness to the community. Inclusive practice aims to create a supportive, safe learning environment where all children can

participate in educational experiences that are appropriate and meaningful for them (ECEC, 2020).

The LSI measures children's involvement in five dimensions: concentration, initiative, perseverance, participation, and social interaction (Vanderfaeillie et al., 2015). Concentration refers to the ability to focus on an activity for an extended period. The LSI measures concentration using four levels: not concentrated, minimally concentrated, sufficiently concentrated, and fully concentrated. Initiative is the willingness to start an activity or explore new ideas. The LSI measures initiative using three levels: no initiative, minimal initiative, and sufficient initiative. Perseverance is the ability to persist in an activity despite challenges or obstacles. The LSI measures perseverance using three levels: not persevering, minimally persevering, and sufficiently persevering. Participation refers to the extent to which children are actively involved in the learning process. The LSI measures participation using four levels: not participating, minimally participating, sufficiently participating, and fully participating. Social interaction refers to the quality and frequency of children's interactions with their peers and educators.

The LSI provides a comprehensive framework for measuring children's involvement in the learning process. It can be used to assess the effectiveness of inclusive practice by measuring the extent to which all children are engaged and involved in the educational experience (Vanderfaeillie et al., 2015). Educators can analyse children's scores in each of the five dimensions of the LSI to identify areas of strength and weakness in their practice and adjust to better support children's learning.

By providing a range of experiences that respond to children's individual needs, abilities, and interests, fostering their sense of belonging and connectedness to the community, and creating a supportive and safe learning environment where all children can participate in educational experiences that are appropriate and meaningful for them, educators can implement inclusive practices that promote positive outcomes for all children (ECEC, 2020). For instance, if a group of children consistently scores low in the social interaction dimension, educators may consider implementing more collaborative learning activities to foster positive interactions between children. Alternatively, if children are struggling to concentrate during certain activities, educators may need to provide additional support or modify the activity to better suit the children's individual needs and abilities.

## Conclusion

This chapter suggested that disability can be a consequence of an impairment that has to do with the concept of production and the ability of an individual to act (WHO, 2011). As a natural consequence of the above definition, the term includes the discrimination to which a person is exposed due to their impairment to act. Hence, disability is not only a health problem but also a multivariable phenomenon. The Salamanca Statement highlighted the beginning of the shift from a medical model of disability towards a social model of disability that is also about social equity and social justice.

Furthermore, this chapter examined the claim that disability is not within the child and its impairment but in the social and attitudinal disablers in education. This claim was advocated via the Salamanca Statement (UNESCO, 1994) and through the adoption of inclusive education (UNESCO, 2009). Inclusive practices in education can be approached as a rationale to accommodate children with disabilities within mainstream education settings or even as a set of reforms that welcome diversity for all pupils.

The chapter discussed labelling and the use of categorical labels in SEND. Labels used in SEND can contribute to education when used cautiously, with specialised knowledge, values and procedures for individualising inclusive practices for individual children independently of their special needs.

The chapter concluded with a discussion on intelligence theories and the educational applications of Gardner's (2011) multiple intelligence theory, which influenced the educational world. As every individual has a combination of forms of intelligence and can develop intelligence to an adequate level, teachers and education ought to encourage and guide every student so the pupils, especially those with SEND, can overcome possible adverse effects labelling can impose.

## Chapter 3 Outdoor education and Forest School

### Introduction

This chapter continues the discussion regarding intelligence and the role of the environment on intelligence. The chapter continues by associating the potential threats to children's experiences regarding outdoor play and learning in the natural environment in the outdoors. Possible examples of such include the extended use of computer games, the loss of outdoor green spaces, and parental restrictions due to concerns about children's safety (Louv, 2005; Gill, 2014). The chapter progresses by outlining the benefits of child-centric approaches that could be an appropriate counter to the current 'performativity agenda' (Harvey et al., 2016) in England, and suggests the adaptation of principles to promote inclusion and well-being within an experiential educational approach to learning.

This chapter highlights the need for the present study and critically discusses previous studies. The discussion that progresses here is focused on literature and research published regarding learning difficulties and outdoor education relating mainly to school contexts in England, including relative international sources. All accessible and relevant literature regarding FS and the inclusion of SEND pupils was used to shape the initial literature review of this study.

### Can the environment we live in make us smarter?

According to Lieberman et al. (2000), the environment can significantly impact one's development, and changes in the environment can lead to changes in behaviour, which is known as malleability. This phenomenon was demonstrated in a study involving Black and mixed-race children who were adopted as infants by upper-middle-class White families. The adopted children outperformed Black and mixed-race children with similar genetic backgrounds on IQ tests and school achievement measures (Scarr & Weinberg, 1976).

Goleman (1995) challenges the conventional view of intelligence as a genetic given that cannot be changed, instead moving towards a conception of intelligence that includes emotional intelligence. Mayer and Salovey (1993) define emotional intelligence as the ability to reason with emotion in four areas, including perceiving it, integrating it into thought, understanding it, and managing it. However, Weinberg (1989) suggests that opposition to IQ tests as measures of intelligence is due to the perception that IQ is inborn, innate, and unchangeable. The emphasis on evolutionary roots and the interest in the role of the environment in our development have also contributed to public controversy surrounding this issue.

Piaget (1955) justifies the emergence of cognitive processing as a result of the reorganising of 'structures' that the individual constructs after interacting with the environment. In general, psychological processes assess what we know (the product), while Piagetian techniques probe how we think (the process) (Piaget, in Weinberg, 1989). Although there is no clear Piagetian theory of intelligence, a variety of studies have indicated a correlation between Piagetian and psychometric scales of intelligence, suggesting the significance of environmental interactions in the development of cognitive structures (Sattler, 1992). Building upon this foundation, Tooley et al. (2021) explore the environmental influences on the pace of brain development, underscoring the critical role that environmental factors play in shaping cognitive processing and intelligence. Their research in 'Environmental influences on the pace of brain development' published in *Nature Reviews Neuroscience*, echoes Piaget's assertions by providing empirical evidence that supports the theory that environmental interactions are pivotal in cognitive development. By examining how different environments can accelerate or decelerate the development of cognitive structures, Tooley et al. (2021) contribute to a nuanced understanding of the dynamic interplay between an individual's cognitive processes and their surroundings, thereby offering a contemporary perspective that enhances our comprehension of intelligence's developmental nature.

### The 'environment'

The term 'environment' is very general, and with it "we tend to characterise all that is around us, all that surrounds us" (Stavrianos, 2016, p.417). The environment has been seen as the place where children as biologically immature humans are required to live through modern childhood (Blundell, 2016). In the "broadest sense, the environment is the set of conditions in a specific place on the surface of the earth" (Stavrianos, 2016, p.416). A generally accepted definition of the environment is that of de Roose and van Parijs (1991, in Flogaiti, 2011), who describe the "environment as the sum of all external conditions that surround a system, an organisation, a community or an object" (Stavrianos, 2016, p.416). The environment can be divided into natural and human-made environments. As Stavrianos (2016, p.416) suggests, "the natural environment includes natural ecosystems, and the human-made environment includes anthropogenic systems man created today or in the past". Moreover, in the past, environmental education was primarily developed to protect the natural environment from humans and promote sustainability (Gavrilakis & Sofoulis, 2002).

Environmental education can act as a medium for raising public awareness regarding environmental issues and as an excellent tool for a change of stances, values and environmental behaviour (Gavrilakis & Sofoulis, 2002).

Stavrianos and Spanoudaki (2015, p.40) suggested that

*Environmental education was strictly related to the issue of survival, as man had to obtain knowledge about the behaviour of nature, to be protected from the elements present in nature, for the exploitation of natural resources, products and other goods. Over time due to cultural and technological advances, the concept of environmental education began to diversify and expand the area of learning and exploration.*

This change resulted not only in the creation of environment-related disciplines such as ecology, plant science, chemistry or geodesy amongst others (Gavrilakis & Sofoulis, 2002)

*but also to a deeper study of these individual research areas. Furthermore, the involvement of people in these areas of science and the systematic activation contributed to the expansion of knowledge, greater experience, better understanding of nature and socio-cultural progress (Stavrianos and Spanoudaki, 2015, p.40).*

Education for the environment as a social issue has developed globally in the last 30 years (Flogaiti, 2011). Several researchers believe that environmental education is a process that can lead to environmental change, a change that is likely to contribute significantly to the improvement of relations not only between citizens but also between citizens and the environment (Korfiatis, 2016).

In Britain in the 1970s, four linked yet distinctive movements significantly contributed to forming the environmental education of today. These were urban studies, environmental studies, conservation, and outdoor education (Cooper, 1996). Hungerford, Peyton & Wilke (1980) emphasise that citizens, through environmental education, can be capable, determined and willing to work individually and collectively to achieve and conserve a dynamic balance between their quality of life and the quality of the environment (Kalaitzidis & Ouzounis, 1999).

In response to the International Conference for the Environment and Development by UNESCO in Rio, Brazil, in 1992, environmental education began to be regarded as "Education for Sustainability" or "Education for Sustainable Development." "Education for Sustainability" is defined as a "lifelong learning process that leads to the creation of informed and active citizens who have the skills of creative problem-solving, have scientific and social education and commitment to engage in responsible individual and collective actions." These actions are intended to help ensure a future that is environmentally sound and economically prosperous (Kalaitzidis & Ouzounis, 1999, pp. 57-58).

Environmental education is also seen as a process that can help individuals become familiar with the environment, work individually and collaboratively to protect it and achieve a balance between the equality of life and the equality of the environment (Flogaiti, 2011). To accomplish this, environmentally active individuals or individuals must be cultivated and organised in social groups with sensitivities towards the environment and ecological issues. Therefore, the primary aim of environmental education is to form environmentally positive attitudes and at the same time, transfer and consolidate these attitudes to similar issues. Flogaiti (2006) argues that positive attitudes towards the sustainability of the environment can be transferred to other phenomena such as economic growth and social stances such as inclusivity.

Stavrianos (2016) outlines the objectives of environmental education with a comprehensive approach, emphasising the development of a holistic understanding of the environment and the intricate relationships between humans and their surroundings. The goals include fostering individuals and groups to grasp the environment in all its diversity and comprehend the dynamics of interactions between humans and their environment. Additionally, the aims involve gaining insight into the interconnectedness of ecological, social, economic, and political factors, alongside cultivating a sense of responsibility and solidarity among individuals. Furthermore, environmental education seeks to equip learners with knowledge about environmental issues, offering scientific clarification, identifying underlying causes, and contributing to solution-finding efforts.

Hungerford, Peyton and Wilke (1980) argue that environmental education is a process that can help citizens acquire knowledge of the environment and above all help them become capable, determined and willing to work, individually and collaboratively, to achieve and preserve a dynamic balance between quality of life and quality of the environment. Based on this approach, the main scope of environmental education is the conformation of environmentally responsible citizens and environmentally responsible social groups. Flogaiti (2006) claims that an environmentally responsible citizen is a person who:

- perceives the environment in most of its aspects and is sensitive to environmental issues.
- understands the functions of the environment and the correlated problems it has.
- is interested in the environment and wishes to participate to improve and protect it actively.
- has developed the necessary skills to identify and solve environmental problems.
- actively participates at all levels to solve environmental problems.

## The Belgrade Charter

The Belgrade Charter was adopted by a UN conference in 1976, marking a pivotal moment in the history of environmental education. It sets forth the ambitious goal of developing a global population informed about the environment and its associated challenges, underlining the importance of knowledge and awareness in fostering environmental stewardship (Korfiatis, 2016). In a contemporary reflection on these foundational principles, Kleespies, and Dierkes (2022) explore 'The importance of the Sustainable Development Goals to students of environmental and sustainability studies—A global survey in 41 countries,' published in *Humanities and Social Sciences Communications*. Their research underscores the continued relevance of the Belgrade Charter's objectives, highlighting how the SDGs have become integral to educating a new generation of students in environmental and sustainability studies. By conducting a global survey across 41 countries, Kleespies and Dierkes provide empirical evidence that today's students are not only informed about environmental issues but are also deeply committed to the principles of sustainability that the SDGs embody. This shift towards incorporating the SDGs into environmental education echoes the Charter's call for the global population to be well-informed, demonstrating progress in achieving its central goal while also emphasising the need for ongoing efforts to integrate sustainability into educational curricula worldwide. In more detail, the following goals for environmental education were presented:

- Awareness: Help individuals and social groups understand the environment and its problems, and the role humans have to play in them
- Knowledge: Help individuals understand the environment as a sum, its problems, the role of humans and the consequences of their actions
- Stances: Help individuals and social groups develop social values, interests and motivation of active participation to protect the environment
- Skills: Help individuals develop the skills needed to deal with environmental issues
- Ability: Help individuals and social groups evaluate environmental parameters and educational programmes
- Participation: Help individuals and social groups develop a severe sense of responsibility for the environment and understand the need to act for its protection (Dimopoulou et al., 2006, p.31)

According to the guidelines for approaching the previous aims, based upon the Belgrade Charter, environmental education:

- must examine the environment in all its aspects

- ought to be a constant and lifelong process
- should adopt a multidisciplinary approach
- must encourage collaboration from local to international levels
- should emphasise the complexity of environmental problems and therefore the development of critical thought and problem-solving skills

(Dimopoulou et al., 2006, p.32)

## Environmental education

Stapp (1969) provides an important definition of environmental education that emphasises the development of citizens with knowledge related to the biophysical environment and its problems. According to Papadimitriou (1998), the goal of environmental education is not only to create awareness of environmental problems but also to inspire citizens to actively contribute towards their resolution.

The term "environmental education" was coined during an International Union for Conservation of Nature and National Resources conference (IUCN-NR) in Nevada in 1970. Metochianakis (2006, p.237) defines environmental education as "a process of learning about the environment, through the environment, and for the environment." The IUCN-NR definition clarifies that environmental education involves recognising values, clarifying concepts, developing skills and attitudes, and making decisions to assess the relationship between human culture and the biophysical environment. As Metochianakis (2006) explains, the ultimate goal of environmental education is to shape a code of behaviour for issues related to environmental quality.

In the USA in the same year, a federal law for the environment was founded that viewed environmental education as a learning process concerned with the relationships of humans with their surroundings. These surroundings could be either natural or human-made. This federal law also includes relationships among demographics, pollution, distributing natural resources, conservation, transportation, technology and planning urban and rural space, with the total environment of humans (Yelland, 2005).

The most accepted definition of environmental education is the one given by UNESCO in Tbilisi, in the former USSR, in 1977. In the Proceedings of the Tbilisi Conference, four characteristics of education distinguish environmental education (sustainable development). These four elements are the following:

1. Orientation to problem-solving
2. Multidisciplinary approach

3. Open up schools to real life; include education to society
4. Persistent learning (Flogaiti, 2011)

According to the Tbilisi Conference, “environmental education promotes development for economic, social, political and ecological interrelationship in urban and rural areas. It provides each person with the opportunity to acquire knowledge, values, attitudes, commitment and skills needed to protect and ameliorate the environment. It helps to create ‘new patterns of behaviour for individuals, groups, societies, for the environment’” (Kalaitzidis & Ouzounis, 1999, pp. 57-58).

At the dawn of the third millennium, we live in a world that cannot be characterised as sustainable. The unsustainable features of our world vary, and they indicatively include a lack of democracy, continuous pressure on the natural environment, rapidly spreading world poverty, and the constant spread of conflict. Also, our world suffers from disputes regarding the very concept of sustainability (Kalaitzidis & Ouzounis, 1999).

The width and density of these symptoms suggest that the present unsustainable situation is a complex issue with social, political, economic, moral, technological, and environmental dimensions and, ultimately, a crisis (UNESCO, 1997a). A crisis that has been structured on values, knowledge, stances, opinions and practices on social, economic and political issues that neglected nature, its complexity and diversity are due to a rationale that aimed to maximise economic profit and technological effectiveness (UNESCO, 1997b).

Klawinski (2022) addresses the intricacies surrounding the concept of sustainability and its integration into education. Despite being a focal point of international dialogues, agreements, and initiatives, the definition of sustainability remains elusive and multifaceted. This ambiguity is partly due to the concept of sustainable development being a social construct, as noted by Kalaitzidis and Ouzounis (1999), leading to diverse interpretations based on varying perspectives and interests (Huckle, Sterling & Sterling, 1996; Carley & Christie, 2017). Klawinski’s 2022 study contributes to this discussion by offering a model for embedding environmental literacy within public education, underlining the complex yet critical nature of educating for sustainability in a way that is both comprehensive and actionable.

The fact that education for sustainability considers various dynamic interactions within socioeconomic subsystems makes it look like a moving target, as they regularly change (Hjorth & Bagheri, 2006). Hence, the achievement of a sustainable future is not a journey with a well-defined endpoint but rather a constant process of dialogue and cooperation and one of planning and commitment.

## Sustainability and education

The idea of sustainability and Education for Sustainability first appears in the book *World Conservation Strategy* (1981) and is founded on the 'Our Common Future' report (WCED, 1987). After the Rio Conference (1992) regarding the environment, sustainability became the most discussed term among environmentalists. However, the concept of sustainability can have different meanings, mainly due to the fact it has been severely criticised (Khan, 1995; Huckle, Sterling & Sterling, 1996).

Firstly, it was argued that it does not include social and political parameters such as poverty, inequalities, and respect for human rights, and therefore it cannot guide us through a lifestyle that is both socially fair and compatible with the planet's well-being (Khan, 1995). Another critique of the term comes from Huckle, Sterling and Sterling (1996), who compare and relate sustainability to democracy, freedom or even socialism. Huckle, Sterling and Sterling (1996) argue that we can have different versions of sustainability, which also means that different power correlations can renegotiate its context.

Orr (2005) suggests that the term can be translated as a transformative tool towards a more just society. It has also been argued that it appears to be a reappearance of the two streams of environmental thinking (human-centric and ecocentric) of the United Nations Conference on the Human Environment in Stockholm in 1972 (Flogaiti, 1996).

## The role of the environment in schools

"Having a multi-sensory environment in special schools is beneficial for both teachers and pupils as it provides a two-way learning process" (Hazreena, 2009, p.44). In addition, Stoneham (1996, p. 8) agrees with Titman (1994), Lucas (1996), and Stoneham (1996) and claims that outdoor environmental learning could provide pupils with:

*a stimulating experience as well as influence their behaviour and their personal development in terms of social relationships. This notion has received further support from Barbara Dunne of the Royal School for the Deaf and Communication Disorders, Manchester: "Pupils are most likely to succeed when they are involved in 'doing' activities rather than academic learning. Environmental education is an ideal activity-learning medium."*

Furthermore, the research findings of Rohde and Kendle (1994), Moore (1999), Malone and Tranter (2003), Hussein (2011), Maller and Townsend (2006) and Hazreena (2009) have suggested that adding stimulations from the natural environment to the learning process "can encourage mental development", improve student "health", and promote "emotional growth" and "social integration" (Hazreena, 2009, p.44). In addition, previous research suggests that being in contact with animals and plants can promote a student's learning motivation.

Having an accessible outdoor environment at schools seems to be highly important for children. It gives them the space they need for free play and opportunities for exploration and learning. Titman (1994, p.58)

*identified four elements that children looked for in school grounds: 1) A place for doing (opportunities for physical activities); 2) a place for thinking (opportunities for intellectual stimulation), 3) a place for feeling (to provoke a sense of belonging), and 4) a place for being (to allow them to be themselves).*

Her research focused on the value of improved school grounds as an educational resource to demonstrate how pupils' attitudes, behaviours and learning skills could be enriched. One way of stimulating student interest in environmental education programmes is to choose fast-growing plants that can provide shade and offer sensory stimulation by being colourful, textured and scented (Frank, 1996; Stoneham, 1996). Building on these foundational ideas, Paulitzki (2024) forecasts a significant shift in educational environments in her article, 'Prediction: All schools will embrace sensory spaces,' published in *eSchool News*. She envisions a future where all educational institutions will integrate sensory spaces explicitly designed to stimulate students' senses and support diverse learning styles. This forward-looking perspective suggests that schools will increasingly recognise the importance of creating multifaceted outdoor environments that not only serve educational purposes but also cater to the sensory needs of students, thus facilitating a more inclusive and engaging learning experience.

### Successful environmental education

Flogaiti (2011) argues that for environmental education to be successful, a series of educational acts and processes must occur. Environmental education programmes should be global and interdisciplinary to improve the problem-solving skills of the pupils. Also, Flogaiti (2011) suggests that the active participation of children in the learning process should be encouraged. The pupils, at the end of the programme, should be able to understand, know and analyse the environment with which they are linked, negotiate issues and problems that relate to the community they live in, and have the will to participate in groups or work individually to solve them. (Flogaiti 2011).

Environmental education allows “all who engage with it” (Stavrianos, 2016, p.425) to engage with issues that concern the surrounding environment. It also aims to allow the participants of such an education “to identify the causes of those issues” and decipher “the strategies that will help to solve them” (Stavrianos, 2016, p.425). Environmental education can

manifest in three forms: formal, informal and non-formal education (see the section below). Environmental education is not an 'education for preservation' nor a sterile 'nature study' (Flogaiti, 2011, p. 193) even though it includes these dimensions. It ought to be considered as a "full process of a new approach of the relations of people to the environment in a way so that it can secure the quality of the environment as well as people's quality of life" (Flogaiti, 2011, p. 193).

### Forms of environmental education

Environmental education varies in its forms, depending on the audience it targets, the methods of application, and the locations where it occurs. These distinctions allow us to categorise environmental education into formal, occurring within school settings; non-formal, through educational visits to places of interest; and informal, happening outside of schools primarily through media (Cordiel et al., 2024). Although environmental education is predominantly integrated into formal education systems due to easier access to designated areas (Tsampoukou-Skanavi, 2004), its efficacy and reach are subject to broader socioeconomic factors.

Cordier et al. (2021) delve into these broader influences in their study 'Plastic pollution and economic growth: The influence of corruption and lack of education,' published in *Ecological Economics*. They examine how environmental challenges, specifically plastic pollution, are exacerbated by economic dynamics, corruption, and educational deficiencies. Their research underscores the importance of addressing these systemic issues to enhance the effectiveness of environmental education across all forms. By identifying a lack of education as a critical barrier to sustainable development and environmental stewardship, Cordier et al. (2021) highlight the need for a multifaceted approach to environmental education that extends beyond the formal education sector. Their findings suggest that for environmental education to be truly impactful, it must be supported by broader societal and economic reforms that address corruption and educational gaps. This perspective enriches our understanding of environmental education by situating it within a larger context of socioeconomic challenges and opportunities, suggesting that efforts to educate the public about environmental issues must be accompanied by systemic changes to create a more informed, empowered, and proactive global citizenry.

This integration links the structural and societal factors outlined by Cordier et al. with the broader landscape of environmental education, emphasising the necessity of a holistic approach that considers economic, political, and educational contexts to effectively cultivate environmental awareness and action.

### *Formal environmental education*

Formal environmental education is a term that refers to environmental education, which occurs in the context of the formal educational system, from nursery school through higher education to seminars and programmes of professional training (Tsampoukou-Skanavi, 2004). The definition of environmental education of the Belgrade Charter is also consistent with the above: 'the sector of formal education includes preschool education, primary, secondary education and higher education, as well as the education and training for educators and professionals working on the environment' (Belgrade Charter in Tsampoukou-Skanavi, 2004, p. 11). In this context of environmental education, the educational aims are predefined and well-planned, while the learning objectives and learning means are 'controlled by the educators' (Tsampoukou-Skanavi, 2004, p. 12). Thus, formal environmental education is a hierarchically structured and planned educational system.

Formal environmental education has predefined educational goals that both pupils and teachers are asked to achieve through a line of specified institutional processes. The target audience is defined: It has standard features such as the age or the educational level of the audience, and it participates in the formal environmental educational proceedings not only voluntarily but primarily because of its compulsory character. Furthermore, the form, type and quality of environmental knowledge in formal environmental education are controlled and judged solely by the teacher and the educational institution or the authority (see p. 55) with the jurisdiction (Tsampoukou-Skanavi, 2004).

### *Non-formal environmental education*

Non-formal environmental education is a form of education that aims to 'develop various sectors of society, an environmental ethos, environmental concept, appropriate skills and situations' (Tsampoukou-Skanavi, 2004, pp. 113-116). The primary goal of non-formal environmental education is the development of the public's environmental awareness as it expands from a country's formal national curriculum. Non-formal environmental education takes place in various community institutions, in areas of natural beauty and protected areas, from eco-touristic areas to centres of social and professional groups or in centres for environmental education.

In non-formal environmental education, the audience does not have specific characteristics (e.g., age, income, educational level) and in contrast to formal education, the audience participates in activities willingly, either as active or passive receivers (Tsampoukou-Skanavi, 2004). The Belgrade Charter contains important references to non-formal education;

however, it was more emphasised during the UN conference for the environment in Moscow (1987), where not only the necessity of specialised trained teachers was stated but also the need to use the media, museums and communication technology to help promote the public's awareness regarding the environment.

In non-formal environmental education, the curriculum is well-defined, yet it uniquely allows participants to select both how they engage with the material and the specific content provided by educators. This approach is exemplified by non-governmental organisations (NGOs) operating outside the traditional educational framework, which assume the educator's role to advance educational objectives. Such entities, as discussed by Tsampoukou-Skanavi (2004) and Cordier et al. (2024), demonstrate the flexibility of non-formal education in adapting to learners' preferences while promoting a deep understanding of environmental issues. For instance, Cordier et al. (2021) examine the broader societal impacts of environmental neglect, such as plastic pollution, emphasising the crucial role education plays in fostering awareness and change. This connection underscores the potential of non-formal educational settings, like those offered by NGOs, to contribute significantly to addressing complex environmental challenges by facilitating tailored and impactful learning experiences.

#### *Informal environmental education*

Informal environmental education progresses during an individual's life and includes any environmental information or environmental knowledge (environmental communication) the individual acquires. It manifests through the media, the cinema, libraries, the internet, and social interaction. It addresses an audience that on the one hand is not defined, and on the other, consists of people who, usually on their initiative, accept the education of this form. In this form of environmental education, the people's participation in various institutional processes or their constant physical presence is not required (Flogaiti, 2006).

Informal environmental education is a process by which every individual acquires values, skills and knowledge from everyday experience and educational influences of their environment. Like non-formal environmental education, informal environmental education can happen and develop throughout each person's life and thus surpasses the limitations of time and place. In this context of environmental education, the audience participates voluntarily and gathers informal environmental education on their initiative. Furthermore, similarly to non-formal education, this form requires no constant or mandatory participation by the audience (Ballantyne & Uzzell, 1994).

To acquire information on environmental issues, the public mainly addresses the media, especially television. This makes the above form of education a valuable tool to spread environmental information and awareness. The media are not only small information channels but can also significantly influence what their audience knows, believes and feels. Hence, the media can have a vital role in the transmission, development and even the contribution to the cultivation of environmental awareness. The media's sources of environmental information are mainly provided by state services, scientific organisations and multinational NGOs, such as Greenpeace or the World Wildlife Fund. The broadcasting of environmental information by the media is described as 'environmental communication' (Tsampoukou-Skanavi, 2004, p. 117).

### The pedagogical importance of education based on the 'place'

The participation of children in an outdoor learning programme can broaden their skills and abilities that require their active involvement and participation, while at the same time, participation in such programmes is thought to be a political, social and ecological act (Rivkin, 2001). The application of educational programmes in the outdoors enables this educational approach to be a pedagogical approach and a tool for bringing humans closer to one another and closer to nature. In this spirit, the application of an outdoor learning programme is enriched with an anthropocentric approach (Germanos, 1998).

Learning in an outdoor natural environment is a case of various factors that include individual characteristics and the perceptions of educators and pupils. These factors can include social, political and educational data and characteristics of the natural surroundings and chronological characteristics, such as the stages of development and evolution of the surroundings. This fact reinforces the need for research to examine the way pupils and teachers can use outdoor space as a field of education and various ways to include that place in the curriculum (Comber, Nixon & Reid, 2007).

Gruenewald (2008) claims that 'the pedagogical importance of place-based education has... already been justified' (2008, p. 43). Notably, Reed (2005) strongly advocates in favour of education outside, as the outdoors can improve children's behaviour and motivation to learn. Place-based education is a multidimensional field of research that expresses cultural characteristics. In addition, it unravels the interactions not only between humans but also between humans and the environment in which they live (Gruenewald, 2008).

Even though the research and the educational role of outdoor places in the school system is not something new, even today it serves various educational goals, scopes and interests as

they change. These goals can be influenced by the educational, political and economic data of each time (Youngman, 2000). For example, during the Industrial Revolution, green places in schools were used to encourage outdoor activities as a countermeasure to deal with tuberculosis, and throughout the World Wars, gardens in schools were used to encourage the production of food (Youngman, 2000). The educational value of outdoor spaces has been recognised by some educators (cf. Montessori, Steiner, Malaguzzi, Dewey, and others) and valued as a context that can offer increased student-centric learning, living experiences and learning (Thomson, 2012). However, the modern lifestyle limits the possibility of exploration and interaction between humans and the natural environment (Malone & Tranter, 2003), while the student's needs appear not to be covered by the traditional adult-led educational system (Smith & McKinnon, 2009).

Outdoor education can also be a pedagogical field since it provides stimulation for the development of educational processes that help the learners develop and cultivate their social interactions. Notably, outdoor education can promote experiences that approach various life issues on a cultural, environmental or even political level. Moreover, education programmes that are conducted outdoors can also function as the frame of communication between pupils and teachers. At the same time, these programmes can function through local practices that aim to solve environmental problems for a wider audience (Pollan, 2006).

It appears that outdoor learning spaces can function as an educational field in which educators and pupils can actively participate in learning, come to know the area in which they live and promote interactions within social groups (Knapp, 2007). In addition, Germanos (1998) suggests that the participants of an outdoor education programme could process these messages and afterwards reconstruct their perceptions regarding their interactions within and with the outdoor space, while at the same time, adopting filtered behaviours and practices. This suggestion is in line with Kolb's (1984) learning cycle, which suggests that learning occurs through the filtration of experiences. Pivnick (1994, p. 62), in accordance with Vygotsky's social constructivism, states that the teachers in an outdoor learning programme guide the learner's attention to 'the wisdom that already exists within each one of them' (Pivnick, 1994, p. 62).

The structural components of the above education are the earth, the forest, water, soil and space that coincide with the guiding principles of sustainable learning. These components become educational tools and help the participants of such a programme to understand the relationships of interdependence and interrelation between nature and humans. Moreover, the activities that relate to outdoor education contribute to the cultivation of environmental intelligence, imagination and ability (Orr, 2005). As the child develops and experiences an outdoor learning

programme, it experiences, on the one hand, itself, by detecting thoughts, ideas, preferences and needs, and on the other, its natural and social surroundings. Therefore, these two explorations are connected dialectically to each other (Germanos, 1998).

In the outdoors, nature itself can act as an educator. The experience of growing seeds and watching the combined mixture of water and sunlight transform those seeds into a small living plant is a learning process on its own. Children, by experiencing this simple process, can learn to keep their natural environment clean for trees and crops to develop while also having fun in it (Dwyer & Bergsund 2016). Outdoor education can also help children to be successful in growing plants and thus enable them to develop a sense of co-responsibility for the environment and reinforce their social interactions through peer-to-peer cooperation. If children do not water the garden, the plants will die. If they do not eliminate weeds, the weeds will dominate their growing plants. Students must work collaboratively to prepare the soil, plant seeds, and regularly water the plants. These processes are opportunities for pupils to work collaboratively. This feeling of taking care of a plant successfully will also promote and develop their self-esteem (Dwyer & Bergsund, 2016).

Outdoor educational programmes are increasingly recognised for their potential to positively influence academic performance and behaviour, either directly or indirectly. School gardens, as a prime example, provide an ideal setting for integrating environmental education with practical field study, offering hands-on learning experiences that extend beyond traditional classroom boundaries. Supporting this notion, earlier research by the State Education and Environmental Roundtable (2000) illustrated the tangible benefits of outdoor learning, showing that pupils engaged in a school garden programme exhibited improved academic performance and behaviour compared to their counterparts who did not participate in similar programmes. This aligns with the findings of Stavrianos and Spanoudaki (2015), who observed that pupils involved in outdoor educational programmes developed a deeper understanding of environmental concepts and acquired skills directly related to environmental education, setting them apart from peers who lacked such experiences.

Building on this body of evidence, Patchen et al. (2024) delve more deeply into the challenges facing the implementation of outdoor educational initiatives. They identify and analyse the barriers as perceived by educators and administrators, providing critical insights into the obstacles that limit children's opportunities for outdoor time in elementary schools. Their study highlights the need to address these barriers, such as logistical constraints, safety concerns, and curriculum pressures, to fully leverage the educational and behavioural benefits of outdoor

learning. By understanding and overcoming these hurdles, educators can more effectively incorporate outdoor programmes into their teaching repertoire, enriching pupils' learning experiences and outcomes (Patchen et al., 2024).

Notably, Langhout et al. (2002) claimed that many outdoor educational programmes were initiated or supported through volunteer work or material donations of members of the society who did not have any children in schools. The in-depth qualitative analysis by Langhout et al. (2002) in their research regarding the cooperation of the community with the school, highlights such opportunities for cooperation between school and society in a garden (Langhout et al., 2002). The garden was efficient in bringing members of the society into the school environment on evenings or weekends, but cooperation between educators and members of the society was minor because the first group was not in the field when the second group was. Other outdoor education programmes focused their interest on imprinting social issues on the participating school. For example, St. Elizabeth's school in Oakland, California, developed a 'peace' garden (Ozer, 2007).

Parents' collaboration in their children's school activities has also been connected with pupils' academic success and reduced failure percentages and many parents willingly participate in their children's outdoor education (Snow et al., 1991; Eccles & Harold, 1996, Steinberg et al., 1997; Frost, 2006). Anecdotal data also suggest that outdoor education can increase collaboration among parents who do not volunteer in indoor classroom activities, such as reading groups (Eccles & Harold, 1996). Finally, the outdoors is an important tool to promote ecological training (Orr, 2005), as 'An education that does not aim to the dominance of men over nature, but the development of understanding and a form of sympathy and concord with nature' (Swan, 1992, p. 119).

### Place-based education

Place-based education can be found in literature as an education of social orientation, ecological training or even biosystems education. It emphasises space and the importance it has as part of the broader environment where it is included (Knapp, 2007).

It is a pedagogical approach based on the pedagogical importance of place (Smith, 2007) and aims at a holistic type of learning. This approach to education offers the possibility for issues of social justice and sustainability to be approached, with the scope including not only knowledge but also the improvement of the participant's quality of life. It is a collaboration between teachers and pupils, and, at the same time, a process that is oriented toward solving local social problems (Smith, 2007). These opportunities are conditions that can perhaps turn youth into successful

active citizens who could influence politics and decision-making (Volk & Cheak, 2003) and take on a leader's role in the future (Gruenewald & Smith, 2014). In such an educational environment, pupils are the creators, and the consumers of knowledge since pupils in this context are 'researching for answers to their questions and concerns' (Gruenewald, 2008, p. 13).

From the above view, a learning process in an outdoor environment can be treated as an educational approach to 'real' life. This is due to its potential to become an educational tool that can significantly contribute to the displaying of learning potential. Capra (2005) suggests that this potential can manifest by reinforcing learning experiences and our understanding of our natural surroundings. At the same time, this approach asks for a commitment to wiser management (Gruenewald, 2008) leading thus to a more sustainable future.

According to Wilson (1994), outdoor education involves the cultivation of a sense of wonder, appreciation for the beauty and mystery of our natural surroundings, chances to experience the joy of closeness to nature, and respect for other living creatures. It also includes the development of problem-solving skills and interest and appreciation for the world around us. These goals acknowledge that learning is more than a cognitive process and that emotions play a particularly important role (Harlan & Rivkin, 2011).

The topic of children and nature has been reviewed frequently in recent years. However, many questions remain underexplored and could be investigated in empirical studies, regarding how benefits vary for different children including factors such as ability and age (Gill, 2014).

This research study, therefore, investigated the belief that environmental education is highly effective through a holistic experiential learning approach. The general concept of learning through experience comes from Aristotle, who claimed in *Nicomachean Ethics* that the things we have to learn before we can do them, we learn by doing them, but an articulated approach was developed by Kolb who heavily drew from Piaget, Dewey and Lewin (Stonehouse et al., 2011).

### The facilitation of student needs through outdoor education

The modern lifestyle, predominantly centred around urban centres, coupled with the gradual reduction of natural areas, significantly limits people's ability to experience and explore natural outdoor environments (Malone & Tranter, 2003). This disconnection from nature not only affects our direct interaction with the environment but also shapes our perceptions and relationships with the world around us. As Stavrianos (2016, p. 424) notes, through a 'matrix of interactions' and relationships, pupils approach reality from their unique perspectives, embarking on a quest for identity within the broader context of their environment (Green, 2007). The human

relationship with nature, as Stavrianos suggests, represents a vital form of connection that can be nurtured and developed through educational programmes, specifically within the framework of school outdoor education programmes. In addition, incorporating place-based educational practices, as advocated by Blonder et al. (2023), into outdoor education programmes offers a potent remedy to the challenges posed by modern urban living. It enables students to reclaim their innate connection to nature, empowering them to explore and understand the natural world through direct, hands-on experiences. This methodological shift towards immersive, inquiry-based learning represents a significant step forward in educating the next generation of environmentally conscious citizens, ready to tackle the challenges of sustainability and conservation in an increasingly urbanised world.

Kaplan and Kaplan (2007) claim that humans are attracted to 'outdoor natural environments' and act efficiently in them, "maybe because those environments were the context in which humans survived and evolved for many years" (Stavrianos, 2016, p. 424). Adding to this, Chawla (2002) identified physiological and psychological links between humans and nature, while others (Kaplan & Kaplan, 1989; Lohr & Relf, 2000), examined the special preference of humans to live close to natural environments.

Outdoor education's potential to accommodate student needs and learning is not a new concept and has been previously discussed. Rousseau (1762), for example, mentions the outdoors as an environment that could provide an effective education. Indeed, outdoor education has been a central concept to education in the past in early years, primary and secondary years. It has been vital to kindergartens (Froebel, 1912), nurseries (Montessori, 1967) and Steiner schools (Steiner, 1947). However, Gill (2014) noticed a decline in outdoor education use in schools and children's play outdoors. Perhaps as Louv (2005) and Waters and Begley (2007) suggested, children lack opportunities for outdoor education; when they get such opportunities, they often miss them or are disappointed in outdoor education due to its poor practice, as it is offered as a one-time or short-term experience (Maynard & Waters, 2007; Bilton, 2010).

Earlier claims (Steiner, 1947; Fröbel, 1912; Rousseau, 1762) also support the biophilia hypothesis (Kellert & Wilson, 1995). The biophilia hypothesis suggests that humans have an innate need to be part of the natural world. Hence the destruction of the natural environment can have destructive consequences for the quality of life of the inhabitants (Kellert & Wilson, 1995). The negative consequences of not spending enough time in the outdoors have also been recognised by Public Health England (Haluzá et al., 2014), who found a negative correlation between time spent on computers and well-being. Both of the previous suggestions should be

deeply considered as Meltzer et al. (2003) claim that at least 10% of children in the UK aged 5 to 15 have a diagnosed disability (Meltzer et al., 2003).

The restorative effects of outdoor environments, as discussed by Hartig et al. (1991) and Kaplan (1995), emphasise the rejuvenating impact nature has on health and strength, contrasting with the often draining urban settings. Kaplan's Attention Restorative Theory (ART) highlights the dichotomy between effortful and effortless attention, positing that urban environments may deplete our attentional resources, which can be replenished in nature through engagement with elements that evoke fascination and motivation without taxing the attentional system (Herzog et al., 1997). This theory supports the notion that natural environments, devoid of technological distractions, significantly contribute to well-being by facilitating a type of attention that enhances learning and cognitive functioning. Integrating these insights, Blonder et al. (2023) extend the application of ART by advocating for educational settings that leverage the natural environment's capacity to foster effortless attention among students. They argue that place-based scientific inquiry, conducted outside traditional classroom confines, not only minimises attentional fatigue but also enriches learning experiences. By situating education within natural contexts, Blonder and colleagues illustrate how the inherent intrigue and fascination of the outdoors can stimulate a deeper, more engaged learning process. This approach aligns with Kaplan's assertion that the benefits of reduced technological interference and enhanced connection with nature can profoundly influence learners' attention, ultimately supporting a more focused and effective educational experience.

Notably, children diagnosed with Attention Deficit Hyperactivity Disorder (ADHD) seem to have significantly enhanced levels of concentration when exposed to the outdoors (Faber, Taylor & Kuo, 2009). Young people with ADHD have been found to have significantly increased levels of concentration after exposure to natural environments in comparison to other environments (Faber, Taylor & Kuo, 2009), which supports the biophilia hypothesis (Wilson, 2017). Accordingly, people have an innate tendency to be part of the natural world, so the destruction of the environment can reduce the relationship between humans and nature and have devastating consequences for the quality of life (Kellert & Wilson, 1995). The above-mentioned findings can be beneficial to pupils.

In addition to the restorative effects, the outdoors could also offer cognitive benefits, as Gardner (2000) suggests with his theory of multiple intelligence. The previous intelligence theory acknowledges naturalistic intelligence and indicates that learners should not be deprived of opportunities to enjoy, learn within and explore the outdoors, even if they are not as able as their

peers in other areas of intelligence. Through their contact with the outdoors, children can also cover their innate need for a relationship with the natural environment (Kellert & Wilson, 1995).

While the mainstream educational system approaches knowledge through different subjects within a curriculum, it can also promote competitiveness and individualism, and it perpetuates the separation of humans and nature, the separation of body and mind, and the separation of reason from emotion (Miller, 2007). This separation of humans from nature, or between the human mind and the materialistic reality, contributed to the weakening of the link humans had with nature (Chatzigeorgiou, 1999). Outdoor education offers many opportunities for learners to deepen and contextualise their understanding within curriculum areas, and for linking learning across the curriculum in different contexts and at all levels. Outdoor education can be a tool to reinstate and reinforce our link with nature (Miller, 2007).

### Educational research about Forest School

FS, an innovative approach to outdoor education, is characterised by its emphasis on regular interactions with natural woodland environments. Despite the significant benefits associated with this educational model, Swarbrick, Eastwood, and Tutton (2004) note that FS is not extensively represented in published literature, suggesting a gap in the academic exploration of this approach. Central to the FS philosophy is a child-led ethos, where children are actively involved in selecting their activities, thereby fostering a sense of autonomy and engagement in their learning process (Knight, 2013a). This model promotes not just educational outcomes but also health and developmental benefits for participants.

In a recent contribution to the field, Beresford (2023) explores “the effectiveness of ‘Forest School’ on the health and development of preschool aged children,” providing valuable insights into how this outdoor educational approach can impact early childhood. Through this research briefing, Beresford offers a comprehensive overview of how regular, structured interactions with the natural environment through FS can enhance physical health, emotional well-being, and social development among preschoolers. This study adds to the body of knowledge by providing empirical evidence to support the implementation of FS programmes as a means to bolster holistic development in early years education. Beresford's (2023) work underscores the importance of expanding FS initiatives and highlights the need for further research to fully understand the scope of benefits associated with this educational approach. By focusing on preschool aged children, the study illuminates the potential for early interventions in outdoor education to lay a foundation for lifelong health, well-being, and environmental stewardship. The findings advocate for the inclusion of FS principles in early childhood education settings, proposing a model that aligns

closely with contemporary educational goals of fostering well-rounded, healthy, and environmentally conscious individuals from a young age.

Previous FS research (Vandewalle, 2010; Roe & Aspinall, 2011b) has identified the ability of FS to facilitate education and even restorative therapy. Indications (e.g., the biophilia hypothesis) also show that children promote their affinity with nature while being outdoors (Lovell, 2009). Moreover, Knight (2011b) has developed an overlapping conceptual framework for FS that integrates FS with the concepts of spirituality, ecotherapy, neuroscience, biophilia, education and sustainability. Knight (2011b), however, does not present a coherent picture of the role of FS in improving the behaviour of its participants (Roe & Aspinall, 2011a) or even the opportunities within an FS setting for social development (Murray et al., 2003). Additional research (Massey, 2004; Lovell, 2009; Lovell & Roe, 2009; Roe & Aspinall, 2011b; Gill, 2014; Southall, 2014) suggests that FS can positively influence children of all ages in formal education, including children in nurseries (Water & Begley, 2007), children in mainstream primary schools (Lovell, 2009; Lovell & Roe, 2009), children in special schools (Roe & Aspinall, 2011a), and children in secondary schools (Southall, 2014). It seems, therefore, that FS can influence children positively in all phases of schooling. However, most research studies do not triangulate their findings (Massey, 2004) and as Gill (2014) suggests, the research in this field still does not provide us with the full picture.

Rocca's 2022 research builds on earlier studies on the impact of FS on child development, including the work of Massey (2004). Massey's study, which focused on eight children aged 3-4, observed not only skill development but also a refinement in the children's questioning over time, highlighting the role of FS in facilitating language use and vocabulary expansion. Rocca (2022) explores this domain, examining how FS practices contribute to broader aspects of children's well-being, thus extending the understanding of the educational benefits of FS beyond cognitive skill development to encompass emotional and psychological health. This evolution in research from focusing primarily on developmental skills to a more holistic view of well-being underscores the multifaceted benefits of FS programmes.

## Outdoor education and SEND

Outdoor learning can stimulate a sense of lifelong connectedness and promote an appreciation for the environment (Gray & Martin, 2012; Louv, 2008). Cheng and Monroe (2012) developed the Connection to Nature Index, which measures empathy for creatures, a sense of responsibility, a sense of oneness, and enjoyment of nature. Their research focused on Year 4 children at a mainstream school without learning difficulties in Florida, USA. Cheng and Monroe's (2012) research showed that outdoor learning had several effects on learners. Cheng and Monroe

(2012) emphasise that outdoor learning enhances environmental awareness among participants, fostering family values towards nature and strengthening connections with the natural world. Additionally, such experiences have been shown to improve self-efficacy perceptions (Stavrianos and Pratt-Adams, 2022). Aligning with these findings, Knight (2013b) advocates that FS activities specifically boost environmental knowledge and foster a deeper understanding of nature. Charles et al. (2008) argue that early educational experiences are pivotal in developing a lasting relationship with the environment. Glanville (2023), who posits that nurturing a sense of wonder in children is crucial for cultivating environmental consciousness, supports this notion. Stavrianos and Pratt-Adams (2022) highlight how outdoor education can be particularly beneficial for students with learning disabilities, enhancing their environmental awareness and self-efficacy.

According to Sara Knight (2009; 2013a; 2013b), FS is a learning process facilitated by trained staff that takes place in an unusual setting such as a general learning space or a commonly used playground. Moreover, the space where FS takes place is made reasonably safe to accommodate children's risk concerns. According to Knight (2011a), FS can happen over time throughout the seasons and can occur in blocks of sessions with structured beginnings and ends. However, the core of this learning approach is the sense of trust in its participants and the child-led, child-initiated character that characterises FS, through which learning through play plays an important role. Similarly, Knight (2011a) suggests that the woodland in an FS setting might 'reconnect the symbiosis between human and natural worlds' (Burrows in Knight, 2011a p.145). Burrows sees the FS approach as a holistic and experiential learning process that can be beneficial to people on the autistic spectrum and neural-typical people. In his doctoral thesis, Burrows (2017) suggests that art and nature can be cross-disciplinary social interventions for adolescents on the autistic spectrum and reports positive findings of people on the autistic spectrum who used expressive arts in ecotherapeutic natural spaces.

Notably, UNESCO's criteria for eco-literacy development (2009) seem to match the FS practice core ethos (Knight, 2011). These criteria involve the development of early years eco-literacy with opportunities given to learners to develop varied learning experiences by integrating knowledge areas, allowing unstructured time, and observing changes in an environment over time. In addition, the criteria for eco-literacy development include observations made to a changing natural environment, the use of tools and the development of practical skills, the development of collaboration and critical thinking skills and the 'encouragement of a sense of wonder' about the natural environment (UNESCO, 2009 p.64).

Wattchow and Brown (2011) claim that connection to place is of high importance as the place is involved with the manifested relationships between people and agrees with Alexander's (2013) idea that a certain percentage of the curriculum should be locally defined. Hence Wattchow and Brown (2011) claim that enough time must be given to a certain place for the people to form and experience authentic relationships. Adding to this perspective, the parents who took part in Knight's (2011) research report that it benefits their children who attended FS in the same natural woodland. In more detail, the parents in Knight's (2009) research reported increased self-esteem and confidence, increased social skills, and communication skills. Furthermore, the parents claimed that the children who participated in FS improved their physical skills, environmental knowledge and understanding, and their motivation and concentration. Notably, the children who took part in the research by Knight (2009) were not diagnosed with SEND.

Knight (2015) pinpoints the need for physical activity and risk management that contribute to a child's development. Sutton (2008), however, identified that society's fear of risk is a major factor that has contributed to the decrease in outdoor learning. This culture of fear is also mentioned by Louv (2011), who regards the decline in outdoor learning as a tendency towards structured indoor learning and play (Louv, 2011) and suggests that children and adults may suffer from a Nature Deficit Disorder, as a consequence of limited access to outdoor settings. According to Louv (2011), this deficit can lead to behavioural challenges. In a more recent study, Parsons and Traunter (2020) suggest that the problem therefore lies "not in the lack of opportunity but in the lack of understanding" (ibid, 2020, p.3) of how and why the outdoors can facilitate learning. Even though the concepts of inclusion and outdoor learning are complex, education stakeholders such as teachers and parents have vested interests in children's learning and their partnership is crucial to securing those interests (Tandon et al., 2016; James and Williams, 2017). These stakeholders can influence education policymaking and affect children's learning both in and outside of school.

Fisher et al. (2008) had previously argued that the effectiveness of outdoor experiences as a learning approach was a rather new concept for many parents. Fischer et al. (2008) added to Sigel and McGillicuddy-De Lisi (2002), who suggested that parents' stances on the education of their children emerge from their own experiences during their education. In a more recent study, Rouse (2015) claimed that the goals of outdoor learning are not widely spread among parents. For Rouse (2015), parents and teachers consider themselves to be working together to achieve the best outcomes for the children (González and Jackson, 2013). However, the parents in Rouse's (2015) study could not identify the benefits for their children of taking part in outdoor

learning sessions. Similarly, in their study, Jayasuriya et al. (2016) highlight the need for parents to fully understand the pedagogical influences that underpin the values of outdoor learning.

In James and Williams's (2017) research, three teachers contend that all students were effectively integrating classroom-based knowledge and field learning in an outdoor setting. James and Williams (2017) argue that children who struggle in indoor learning sessions, which demand traditional skills involving a lot of reading and writing, sitting and listening often lead and excel in outdoor education. Perhaps this is because there, they can demonstrate critical thinking through a hands-on experiential approach (Barlow, 2015). Teachers, however, have appeared reluctant not only because of their lack of training (Bilton, 2010) in the way an outdoor setting can facilitate learning but also because they consider the outdoor settings to be less controlled and quantified than the indoor classroom (Ceppi and Zini, 1998).

### Forest School in early years education

Research on the impact of FS on early education has mainly used qualitative methods to study child outcomes (Massey, 2004; O'Brien & Murray, 2005; 2007), with some studies focusing on views from either FSLs and FS teachers (Maynard, 2007) or the children themselves (Ridgers, Knowles & Sayers, 2012). Beresford (2023) adds to this by examining the effectiveness of FS on preschool children's health and development, offering a broader perspective that encompasses various stakeholders' views. This approach enriches our understanding by integrating different insights on the benefits of FS, thus presenting a more holistic view of its influence on early childhood development. Other researchers claim other positive effects and outcomes, such as appropriate and assessed risk-taking (Waters & Begley, 2007). When children climb trees, for example, they can assess the risk they take on falling and evaluate strategies to climb down (Waters & Begley, 2007).

Furthermore, FSs can positively influence an increase in children's physical activity (Lovell, 2009). However, much of the research is still based on anecdotal evidence, case study data and descriptions of practice (Vandevale, 2010; Southall, 2014) that are not triangulated or refined through scientific measures. This suggests that FSs are not well represented in academic literature (Massey, 2004; Swarbrick, Eastwood & Tutton, 2004; Knight, 2011a).

Waters and Begley (2007) also investigated the effects of FSs on children attending the Early Years Foundation Stage (EYFS) by comparing the risk-taking behaviours of two children at an FS compared to the playground. The two children were selected by their teacher, whose choice was based on pre-existing risk-taking characteristics. The study attempted to avoid bias by

drawing on rated reliability from within the research participants, as supported by Gough (2007). The results suggested that more appropriate risk-taking occurred at FS for both children (Waters & Begley, 2007).

### Forest School in primary education

Another small-scale qualitative study by Davis and Waite (2005) involved 15 parents, 60 children and some teachers and FSLs (numbers for staff not specified). The research focused on the delivery and the evaluation of a six-week “Forest School in three different settings in Devon”, England, and used a mixed-methods design to report “on identifying changes to children’s social skills, play, language and cognitive development”. The findings reported positive developments in each area explored. Davis and Waite (2005), however, became aware, by examining the “evidence gathered by the undergraduates, that each programme varies according to the child attending, the leaders and supporting staff, the site used and the weather experienced” (Davis & Waite, 2005, p. 2).

Furthermore, Lovell (2009) investigated physical activity at an FS in Scotland with a group of 26 children aged 10 to 11 years old. Using a two-phased research design, Lovell (2009) suggests children were more active on FS days in comparison to normal school days. Furthermore, Lovell denies any gender effect during an FS programme, and therefore activities appeal equally to both sexes (Lovell, 2009).

More recently Ridgers, Knowles and Sayers (2012, p.60) conducted “a case study” in order “to focus on the natural play of 17 children aged 6-7” in England. The researchers argue that the weather was not a significant barrier to the FS and conclude that natural environments provide diverse “play that tests children’s competencies, enables them to manage their perceptions of risk and helps their creativity, observation and motor skills” (Ridgers, Knowles & Sayers, 2012, p. 60).

### Research drawing on Forest School staff

Water and Begley (2007) claimed that FSs might improve children’s appropriate risk-taking. However, Maynard (2007) indicated a variety of attitudes towards risk-taking. Maynard (2007, p.385) “interviewed two Forest School leaders and two early years teachers about the programme they were running”, which included “25 children (16 reception and nine in a special teaching facility aged 5-7)”. With the use of discourse analysis, Maynard (2007) suggests that “the teachers appeared to have a high level of control and were both directive and protective” (Maynard, 2007, p. 385). According to Maynard (2007, p. 386), “the forest school leaders were

observed to adopt a quieter more facilitative style". The teachers claimed that this was a drawback in their practice from strategic policy, such as the National Curriculum (DfEE, 1999). Hence, Maynard's (2007) study highlights not only frictions caused by educators but also the potential FS has to impact children and stimulate educators to reflect on their practices.

In another study, Maynard (2007) used interviews to investigate the views of three FSLs who worked with children aged three to five years. In that study, Maynard (2007) claims that FS "was encouraging children to appreciate, care for and respect the natural environment" (2007, p. 323), linking it to Education for Sustainability. Each FLS in the interviews discussed their view of how this happened, including the importance of the natural environment in children's lives, positive adult-child relationships and the availability of natural play and opportunities to take risks in the programme. Using the above studies, Knight (2011b) conducted a thematic review of 14 accounts by FSLs (Knight, 2011a) that reflected the use of FSs with children aged two to 19 years in the UK, including pupils diagnosed with SEN. Her research concluded in the production of an overlapping conceptual framework for FSs. An FS for *all* of Knight's (2011b) conceptual framework supports the idea emerging from previous research (Maynard, 2007, p. 380) of "conceptual features" of FSs and supports FLSs in "thinking about opportunities provided at a forest school".

In more recent years, a growing body of research has explored the benefits of outdoor education and FS programmes for children. The benefits are manifold, ranging from physical and mental health improvements to enhanced academic and social skills (Dettweiler et al., 2015; Lovell, 2009).

Coates and Pimlott-Wilson (2019) conducted a qualitative study to explore the experiences of children in FS programmes in the UK. The study was based on semi-structured interviews with ten children aged between six and eight years who had participated in an FS programme for at least six months. The authors found that the children experienced a range of benefits from their participation in the FS programme. These included improved physical health, enhanced self-confidence, and increased engagement with learning.

One key finding of the study was that the children developed a sense of ownership and responsibility over their learning, which motivated them to participate actively in activities and learn from their mistakes. This sense of ownership is particularly relevant to the thesis, which focuses on the inclusion of children with SEND in outdoor education programmes. By giving children with SEND the opportunity to take ownership of their learning in a supportive and

inclusive environment, outdoor education programmes such as FS can help promote their academic and social development.

Another important benefit of outdoor education and FS programmes for children is the opportunity to develop a connection with nature. This connection has been linked to a range of positive outcomes, including improved mental health and well-being (Bragg et al., 2018; Martin, 2010). In their study, Coates and Pimlott-Wilson (2019) found that children who participated in the FS programme developed a deeper appreciation of the natural world and became more aware of their impact on the environment. This finding is particularly relevant to the thesis, which explores the potential of outdoor education and FS programmes to promote environmental education and sustainability among children with SEND.

In his chapter in the Routledge International Handbook of Outdoor Studies, Crosbie (2015) highlights the importance of outdoor education and FS programmes in promoting inclusivity for children with disabilities. The chapter focuses on the barriers to inclusion that children with disabilities may face in accessing outdoor education programmes and provides guidance on how these barriers can be overcome. Crosbie emphasises the importance of creating an inclusive environment in which children with disabilities feel supported and valued. This includes adapting activities to meet the individual needs of children with disabilities and providing appropriate support and training to staff.

Crosbie's insights are particularly relevant to this thesis, which focuses on the inclusion of children with SEND in outdoor education and FS programmes. By creating an inclusive environment that is tailored to the needs of each child, outdoor education programmes can help promote the academic, social, and emotional development of children with SEND. Crosbie's chapter provides valuable guidance on how this can be achieved, highlighting the need for staff training and support to ensure that all children are included and valued in the outdoor education experience.

In conclusion, the study conducted by Coates and Pimlott-Wilson (2019) highlights the numerous benefits of outdoor education and FS programmes for children, including improved physical and mental health, academic and social skills, and environmental education. These benefits are particularly relevant to this thesis, which focuses on the inclusion of children with SEND in outdoor education and FS programmes. By creating an inclusive environment that is tailored to the needs of each child, outdoor education programmes can help to promote the academic, social, and emotional development of children.

## Parents' and teachers' stances regarding outdoor education and Forest School

Garden and Downes (2023) discuss the rising prominence of outdoor education and FSs. These approaches, known for valuing nature's role in child development, have seen growing interest. However, opinions among parents and teachers on these educational methods vary. Their review delves into the research from the past two years, aiming to shed light on the current perspectives of parents and teachers towards outdoor education and FS, highlighting the complexities and differing viewpoints within these educational contexts.

According to Garden (2022), parents generally have positive attitudes towards outdoor education and value the benefits it offers their children. In a study of Danish parents, Bentsen et al. found that parents viewed outdoor education as a way for their children to develop independence, resilience, and social skills. Similarly, a study by Khunga (2022) found that Swedish parents saw FS as an opportunity for their children to develop physical skills and confidence and to learn about nature and the environment. In both studies, parents also expressed concerns about safety and supervision, indicating a need for clear guidelines and communication from educators.

Teachers, too, generally have positive attitudes towards outdoor education and FS, as indicated by a review by Cont et al. (2023). The authors found that teachers perceived outdoor education as beneficial for student learning, particularly in developing social and emotional skills. However, the review also highlighted challenges in implementing outdoor education in schools, such as time constraints, lack of resources, and concerns about safety and liability.

Another study by Hopkins (2022) explored the experiences of teachers who participated in a professional development programme focused on outdoor education. The authors found that teachers reported increased confidence in delivering outdoor education activities and saw improvements in student engagement and motivation. However, some teachers also expressed concerns about the practical challenges of implementing outdoor education in their schools, such as scheduling and logistics.

Overall, recent literature suggests that both parents and teachers have generally positive attitudes towards outdoor education and FS. However, concerns around safety and logistics and the challenges of implementing these approaches in schools highlight the need for clear guidelines and support for educators.

## Forest School and SEND

FS programmes are gradually being made available to other groups of children, including those with SEND (Knight, 2011a). Knight (2011a) used a grounded theory approach in her research to explore the way experiential learning occurs in the outdoors for children aged from two to five years old. Knight (2011a) suggests that the unique ethos of the FS is defined by several overlapping conceptual frameworks. FS for Knight (2011a) contains fragments from concepts such as sustainability, education, spirituality, the outdoors, environment and adventure experiences, and ecotherapy. Knight (2011b) suggests that FS might accommodate SEND pupils and identifies links between SEND and FS practice. For Knight (2011b), FS can facilitate Maslow's Hierarch of Needs (Maslow, 1943) as it provides a safe environment in which clothing, food, shelter and water are freely given. Furthermore, FS provides an ideal opportunity for children to feel a sense of belonging and a sense of ownership of their school area. Finally, according to Knight (2011b), FS praises learners and increases their sense of responsibility through tasks and group work, thus giving learners a sense of contribution and achievement. Furthermore, Knight (2011b) acknowledges the potential links of FS with the Theory of Multiple Intelligences developed by Gardner (1985) as the FS experience provides opportunities for the learners to promote their creative, physical, social and personal skills and development and provides them with knowledge and an understanding of the world (Knight, 2011b).

Cree (2011) worked with 'challenging' boys aged from 14 to 19 years old in an FS approach that aimed for learning outcomes, in collaboration with the Worcestershire County Council's Education for Sustainability Centre. Cree (2011) suggests that success is being facilitated through child-led activities in a supportive FS environment. Furthermore, Cree (2011) claims that FS can provide 'low achievers' with long-term and consistent relationships, give them responsibilities and marry qualifications with a teenage-centred learning approach. Cree (2011) claims that woodwork helped one of the children, who was diagnosed with ADHD, to reduce his stress levels.

Interestingly, Action for Children (2010) and Archimedes Training (2011a; 2011b) have reported positive impacts of FS on young people with SEN. According to previous reports, FS is a learner-led experience capable of providing learning outcomes through a long-term process. However, both of these reports are limited in their validity and the trustworthiness of the findings as the researchers of these reports had vested interests in finding a positive impact of FS on young people who attended their sessions. This is also reflected by Knight (2011a, 2016), who

states that weaknesses in the evidence base of FS, especially regarding children with SEN, reflect the approach of how FS can accommodate children with additional needs.

Roe and Aspinall (2011a; 2011b) have researched the impact of FS on pupils with SEN. Their first research (2011a) involves a control group of six pupils from a secondary mainstream school and four other children who were recruited from a different mainstream school and were labelled as having 'poor' behaviour. In their first report, they used the Mood Adjective Checklist (MACL) to evaluate mood through stress, energy, anger and hedonic tone. Their research suggests that exposure of the children to FS had positive effects on the mood of the pupils and supports the claim that restorative outcomes are promoted in an FS setting versus a conventional indoor school setting. However, it appears that measures were only taken on four snapshots (pre- and post-FS days), potentially limiting the validity of the findings. The same researchers examined the emotional responses of eight boys aged 10-12 with 'severe trauma and mental disorder' (Roe & Aspinall, 2011b, p. 539). The children in this study had attended FS as an alternative curriculum. The data collection lasted for six months; however, the researchers felt that the participants were vulnerable. They decided not to observe them directly but to record their memories each day when the school day ended and justified their approach due to ethical considerations to avoid stress being inflicted on the participants (Roe & Aspinall, 2011b). Over time, the researchers identified and reported the following themes: trust, joy, anticipation, surprise, anger, fear, disgust and sadness. Roe and Aspinall (2011b) argued that ART (Kaplan, 1995) could be used to explain to some extent the restorative effects of FS since the previous requires effortless attention and at the same time triggers a restorative effect (see p. 204).

The following four studies highlight the significance of outdoor learning and education in promoting students' well-being, engagement, and learning. Warren and Breunig's (2019) study emphasises the importance of inclusive outdoor education for children with and without disabilities. Murray et al.'s (2003) investigation into the impact of outdoor learning on children's health and well-being found that it had positive effects on their physical, mental, and social health. Remmen and Iversen's (2022) study explored the benefits of outdoor learning for children with SEND in Nordic countries, with a focus on the use of digital technologies. Samuelsson and Hu (2019) emphasise the impact of outdoor education on children's learning and development across multiple domains.

These studies demonstrate the important role that teachers play in facilitating and integrating outdoor learning into curricula and the need to address barriers to implementing

outdoor learning. Additionally, the studies suggest that outdoor environments should be an integral part of education from an early age to promote children's learning and development.

The findings of these studies align with the focus of this thesis on the FS programme and the involvement of pupils with SEND in outdoor education. They can be used to inform education policies and practices and to encourage further research into the role of outdoor learning and education in promoting students' well-being and learning outcomes and are linked to the present research.

Murray et al. (2003) investigated the impact of outdoor learning on children's health and well-being. The study found that outdoor learning had positive effects on children's physical, mental, and social health. The findings of Murray et al.'s study support the benefits of outdoor education, which is an important component of the FS programme examined in the thesis.

Mamtora and Doherty (2017) explored the benefits of outdoor learning for children with SEND, with a focus on the use of digital technologies. The study found that the use of digital technologies can enhance the learning experience for children with SEND in outdoor environments. The findings of Mamtora and Doherty's study align with the focus of this thesis on the involvement of pupils with SEND in outdoor education.

Samuelsson and Hu (2019) investigated the impact of outdoor education on children's learning and development. The study found that outdoor education can enhance children's learning across multiple domains, including cognitive, social, and emotional development. Pramling Samuelsson et al.'s findings support the importance of outdoor education, which is an integral component of the FS programme examined in this thesis.

### Benefits of outdoor education

Previous research supports claims of the benefits of humans being close to nature. Rivkin (1997) suggested that children living in urban areas need everyday contact with nature. More recently, Kalyva et al. (2007) suggested that being close to nature can offer benefits in physical and mental health. Kaplan (1995) also supports benefits to one's mental health and physical health (see p. 9) through ART (see p. 204). The previous researchers (Kaplan, 1995; Kalyva et al., 2007) suggest that being close to nature can offer higher satisfaction from work and also reduce stress levels.

Roe and Aspinall (2011b) and Vandewalle (2010) expanded the discussion regarding the benefits of outdoor education to learners. Roe and Aspinall (2011b) and Vandewalle (2010) reported, amongst other possibilities of outdoor education, that outdoor education could offer its

participants better risk-taking skills, cultivation of social skills, cognitive development and an increase in physical activity for pupils (see p. 68).

Outdoor education is a holistic education. This approach can benefit participants who engage with it academically, emotionally, socially and psychologically (Knight, 2011a). Cognitive benefits can also be promoted through naturalistic intelligence (Gardner, 2000), as the participants of outdoor education could relate more closely to their natural surroundings. Kellert and Wilson (1995) argue that through outdoor education, children fulfil their innate need to relate to their natural environment. Thus, outdoor education can offer pupils cognitive benefits (see p. 203), as through outdoor education, learners enjoy opportunities to experience and explore the outdoor environment (see p. 61).

Kaplan (1995) suggested that urban environments can cause disruptions to a learner's attention, but this can be restored to some extent through environments that offer the learner stimulations that can be helpful for a learner to maintain their focus and attention with less effort (see p. 63). These effects could be supported through a natural environment (Herzog et al., 2003). Furthermore, outdoor education can offer opportunities for connections through interactions between reality and the participant as the producer of knowledge. Also, the participants of an outdoor education programme can directly redefine their connections with nature experientially.

In a similar spirit, Waller et al. (2010) suggest that growing evidence demonstrates benefits when children spend regular time learning and playing in the outdoors. Educational studies in outdoor environments have previously suggested that the outdoors can act as a pedagogical field (Stavrianos & Spanoudaki, 2015; Stavrianos, 2016) and suggest that outdoor education experiences can facilitate the positive development of self-esteem, peer-to-peer socialisation and teacher-student relationships and a positive attitude towards school. Furthermore, children who engage in learning activities in outdoor environments such as the woods, riverbanks, beaches, and mountains can benefit academically and behaviourally (Hart, 2007; Moore, 2009; Gill, 2014).

### Involvement, engagement and well-being concerning learning and the learning process

Gilby et al. (2008) suggest that some students show feelings of discomfort towards formal education. In more detail, Gilby et al. (2008) claimed that 10% of students 'hate' school. Moreover, the term 'hate' in the previous research was found to be highest amongst students who did less well than others. Gilby et al.'s (2008) research suggests an analogy between the level of engagement through the learning process and their likeness to schools as a whole. Notably, it acknowledges that students can increase their self-esteem and social interactions and raise social

and emotional skills (OECD, 2015; Stavrianos & Spanoudaki, 2015) through their education (OECD, 2015). For these positive effects to take place, however, Franck et al. (2020) suggest that their education needs to use an approach that respects the cultural and academic characteristics of these students. In this context, schools are urged to become institutions that promote active learning to enhance the well-being of their students. By doing so, they can promote cognition and improve their later adult lives (OECD, 2015; Glanville, 2023).

Engagement in the learning process has also been associated with the quality of pedagogy and achievement (Smith et al., 2005). Further student engagement research (Dunleavy et al., 2010) suggests that the levels of student engagement in the learning process seem to fall steadily as children advance through their school system. On the one hand, engagement has been found to have desirable lifelong effects on students and their well-being (Fredrickson & Branigan, 2005). Disengagement seems to be a constant in many developed countries, where concerns are increasingly raised regarding 'disengaged achievers' in both education and the job market (Price, 2012). Goldspink and Foster (2013, p.2) suggest a "widening gap between what interests, motivates and engages young people in their 'real' lives and their experience of schooling" and concur with Alexander (2013) that educators are more likely to adopt stances that promote goals of education when these positively affect achievements and students' life outcomes.

Lei et al. (2018) examine the intricate connections between various dimensions of student engagement and their impact on academic performance. Engagement encompasses behavioural components (Fredricks et al., 2022), cognitive aspects (Gilby et al., 2008), and affective responses (Kort & Reilly, 2002; Tiplady & Menter, 2020). Leavers (1993) posited that deep-level learning occurs when learners are deeply involved in the process, suggesting engagement is a synergy of involvement and well-being. Fredericks et al. (2022) articulate that student engagement is significantly linked to behaviour and can be assessed using observational tools, emphasising that students' active participation throughout the learning process is a direct indicator of engagement. Kort and Reilly (2002) highlight the range of emotions from anxiety to excitement that engaged students may experience during the learning process. Gilby et al. (2008) argue that cognitive engagement is crucial as it reflects students' beliefs about their learning circumstances. Lei et al. (2018) conclude that a student's understanding of what and how they are learning is pivotal in fostering engagement, demonstrating the multifaceted nature of engagement and its critical role in enhancing academic achievement. This synthesis of research underscores the complex interplay between engagement's behavioural, cognitive, and affective components and

its significant influence on educational outcomes. In this study, the LSI was used to measure children's involvement in outdoor education and FS programmes. The LSI is a widely used tool for assessing children's engagement in learning activities and is a reliable and valid measure of student engagement in a variety of educational settings (Fredricks et al., 2022).

While other tools for assessing children's engagement, such as the Engagement Profile and Scale (EPS), have also been developed and recommended for use with children with SEND (Rochford Review, 2016), the LSI was chosen for several reasons. Firstly, the LSI was specifically designed to measure engagement in outdoor education and environmental learning contexts, making it a more appropriate tool for the research context of this study (Rickinson et al., 2004). Secondly, the LSI has been validated for use with children with SEND, including those with moderate to severe learning difficulties (Decort et al., 2019).

However, as with any measurement tool, a critical examination of its validity and reliability is necessary. Recent studies have highlighted the need to further investigate the use of the LSI concerning children with SEND, particularly in terms of the tool's sensitivity to individual differences and potential biases in its measurement. In addition, as the Rochford Review (2016) recommends the use of the EPS for assessing engagement in children with SEND, it may be worth exploring the use of both the LSI and the EPS in future research to determine which tool is more appropriate for different contexts and populations.

While the LSI was chosen as the tool to measure children's involvement in this study due to its specificity to the research context and validation for use with children with SEND, further research is needed to critically examine its use and compare it with other tools for assessing engagement in children with diverse needs. No current research tools appear to measure engagement as described above (Fredricks et al., 2022; Gilby et al., 2008; Goldspink & Foster, 2013). However, it should be noted that Csikszentmihalyi defined the state of flow as an indicator of total immersion in an activity (Csikszentmihalyi, 1990). Csikszentmihalyi and Csikszentmihalyi (1990) drew heavily on Vygotsky (1929, 1978, 1972), who included schemas, affect, beliefs and attitudes to accumulate emotional experience. Vygotsky (1929) had already combined behavioural components with challenge and the tension of the unfamiliar in the zone of proximal development. In addition to Vygotsky (1929; 1972), however, Csikszentmihalyi (1990) combined behavioural components with actions and an affective component with a sense of achievement linking all components concerning where and with whom learning takes place, including the relationships that are being developed in the context. Hence, a few years later, Csikszentmihalyi and Nakamura (1979) developed the Experience Sampling Method as a tool to measure this

dynamic state of 'flow'. The combination of deep involvement with satisfaction and the state of the flow traces back to Laevers (1993) and the EXE curriculum. Therefore, the present research will use the LSI as Laevers (1993) defined involvement as the behavioural measurement and well-being as the affective aspect of student engagement. For Laevers (1993), involvement and well-being are characteristics that can reveal the quality of an educational approach through their effect on the student. Therefore, through the LSI, Laevers (1993) relates directly deep-level learning to student involvement so it fits the research purposes of this study.

### Forest School as an inclusive practice

The Green Paper Excellence for All Children: Meeting Special Educational Needs (Department for Education and Employment, 1997), was published in England in 1997 by the new Labour government and ratified the Salamanca Statement (UNESCO, 1994) in the UK. The rights of children and young adolescents with SEND were followed in legislation published in the UK, including the 2001 Special Educational Needs and Disability Act (Department for Education, 2001) and the SEN Code of Practice published the same year. The Special Educational Needs and Disability Act of 2001 found unlawful any discrimination, rejection, exclusion or refusal of the admission of a student with SEND to a school. In the same spirit, the 2001 SEN Code of Practice acknowledged the right of children and young adolescents with SEND to be involved in any decision-making or to express their opinions on matters that affected their lives. In addition to the previous legislation, the Children and Families Act of 2014 and the revised SEND Code of Practice: 0-25 (Department for Education and Department of Health, 2014) also emphasised the need for active participation in the education of children and young adolescent with SEND (Dimitrellou & Male, 2020).

The SEND Code of Practice focuses on four broad areas of SEN support. These are communication and interaction, cognition and learning, social-emotional and mental health and sensory and/or physical needs (Department for Education and Department of Health, 2014). The SEND Code of Practice replaced previous SEND personal statements with the introduction of individualised Education Health and Care needs assessments and plans (EHC). Individualised REHC plans include the views, interests and aspirations of the child, their special educational needs and their health and social care needs associated with SEN. EHC plans also consider potential outcomes for the child and social and health provisions that can deliver specific interventions and facilitate the corresponding placement facilities (Hellawell, 2018).

The idea of individualised or personalised learning has been common among educational stakeholders concerned with student disengagement from learning (Saito & Fatemi, 2022).

Patrick et al. (2013) link personalised learning with the work of progressive school reformers such as John Dewey (1902). Patrick et al. (2013) define personalised learning as tailored or individualised learning that accommodates the specific needs of the pupil. In particular, Patrick et al. (2013, p.5) state:

*Personalized learning is tailoring learning for each student's strengths, needs, and interests - including enabling student voice and choice in what, how, when, and where they learn - to provide flexibility and supports to ensure mastery of the highest standards possible.*

Watkins (2012, p3), who is an advocate of tailored learning, argues even further, however, and asks for a “richer view of personalisation” that moves beyond the “individual” and “personalised inquiry” to seek “the personalised community classroom”. According to Watkins (2012, p. 12), this classroom ought to view learning as “a web of relationships and contexts” in which “learning is seen as fundamentally social by which people join communities”. In this perspective, personalised learning is “about building participation through belonging and collaboration” (Watkins, 2012, p12). Furthermore, the past two decades have seen increased interest globally (Woods & Woods, 2009; Farrell, 2008) in child-centred school programmes that emphasise an active pedagogy and use the involvement of parents and students in the learning process (Down and Choules, 2017). Farrel (2008, p.121) argues that many schools around the world desire to move away from the “traditional, age-graded 'egg crate' pedagogical model” of formal education. Notably, drawing from Watkins (2012), Fielding (2012) seems to agree with the Reggio Emilia approach to learning and urges educational stakeholders to look beyond instrumental versions of personalisation and view schools as “agents of democratic fellowship” to develop “a commitment to education in its broadest sense in an explicitly democratic form” (Fielding, 2012, p.82).

The links of FS as an individualised learning practice in this context become more apparent when one considers that FS is a “specialised learning approach” (Forest School Association 2013) and can be bound by standardised curriculum goals (Leather, 2018; O'Brien, 2009). The Forest School Association (2018) suggests that FS is a child-led approach to learning that considers the views of the child and provides the opportunities needed for the children to participate in discussions and express their feelings. This claim suggests that the FS approach can enrich a limited and prescriptive curriculum (Brundrett, 2012; Knight, 2016). Through FS sessions, the children in the present research could play in the outdoors for an extended period. During this time, the children could assimilate stimuli and information from the external world, as the FSL argues. This claim is in line with previous claims that learning through play incorporates

a significant social and environmental element, where children interact with others and their environment to adopt new ways of thinking and/or modify their existing ones (Vygotsky, 1978; Rogoff, 2008; Coates & Pimlott-Wilson, 2019). In addition, FS uses an outdoor environment to engage children with learning activities that intend to develop problem-solving skills and cooperation between them (Coates & Pimlott-Wilson, 2019).

In England, the use of FS as a learning approach within the early years provision (Waite, 2010) is gradually increasing in popularity in mainstream education in primary schools (Knight, 2016; Walker, 2023). Through FS, children can enjoy risk aversion (Connolly & Haughton, 2017), an increase in their confidence, self-esteem and independence (Maynard, 2007; O'Brien & Murray, 2007; Knight, 2016; Coates & Pimlott-Wilson, 2019) and better social interaction with their peers (Nawaz & Blackwell, 2014) and with the adults (Slade et al. 2013) who take part in the FS sessions. Knight (2016) and Leather (2018) both claim that the child-led play pedagogy offered in FS counters to some extent the traditional adult-led classroom learning particularly for children beyond early years. FS can facilitate positive effects for both teachers and children who take part in it. On the one hand, as an outdoor learning environment, FS motivates teachers to promote learning through collaborative group work instead of direct instruction (Glackin, 2018). On the other hand, children in FS engage in an embodied education that stimulates kinaesthetic experiences (Ord & Leather, 2011; Leather, 2018) and situates learning in a new environment where 'traditional boundaries of schooling are stripped away' (Coates & Pimlott-Wilson, 2019, p.35). The kinaesthetic learning that occurs in FS can provide the opportunity for field experiences alongside peers, which accommodates deeper learning (Quay et al., 2002; Coates and Pimlott-Wilson, 2019). In the same spirit, Quibell et al. (2002) suggest that outdoor learning environments could have positive effects on children's attainment and act as motivation stimuli for children to learn. Hence, FS can offer children opportunities to cultivate their skill sets and transfer knowledge and understanding between settings.

### Key concepts informing the research design

Outdoor education is experiential learning in, for and about the outdoors. Outdoor education takes place in formal education in outdoor settings (Gill, 2007). Outdoor learning is learning that takes place outside the borders of closed walls of a classroom and has the potential to strengthen schools' practice (Rickinson et al. 2004; Dijk-Wesselius et al., 2020). Outdoor learning supports memorable and stimulating learning experiences while it instils "excitement, interest and motivation to learn" (Bell et al., 2009 p. 4). Outdoor education that has environmental education is a process that allows individuals to explore environmental issues, engage in problem-

solving, and act to improve the environment. As a result, individuals develop a deeper understanding of environmental issues and have the skills to make informed and responsible decisions.

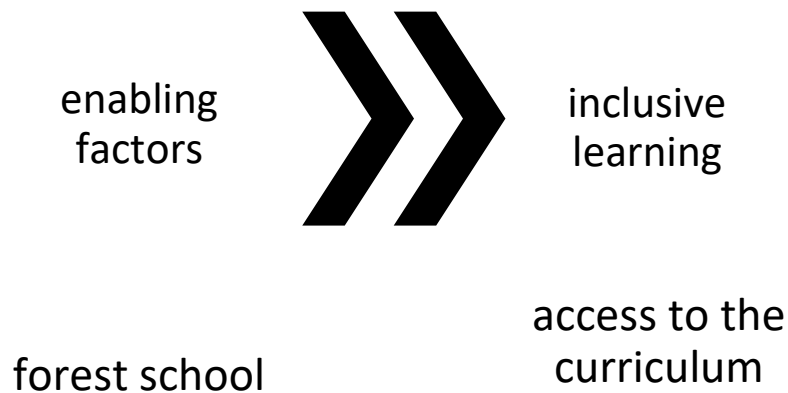
The concept of outdoor learning is linked to place-based education, which is defined as a process of using the local community and environment as a starting point to teach all subjects through a hands-on approach (Sobel, 2004). Place-based education heightens education's commitment to active citizenship and "improves the active engagement" of local citizens and environmental resources in school life (Sobel, 2004, p.4). Gruenewald (2003) suggests that place-based education is underpinned by several pedagogies including "experiential learning, contextual learning, problem-based learning, constructivism, outdoor education... environmental and ecological education" (Gruenewald, 2003, p.3).

FS is a distinctive form of outdoor education (Dabaja, 2021). FS offers children repeated, regular opportunities to learn and play in an outdoor setting (Harris, 2018). FS draws on child-led learning and learning through experience (Knight, 2011a; 2011b; 2013; Joyce, 2012), and its practice has been increasing in UK primary schools since 1994 (Blackwell, 2015). FS lies at the centre of several movements such as outdoor learning, child-led learning, experiential learning, teamwork and social skills and risk, challenge and adventure. At the same time, the FS approach reconnects children to nature and place (Harris, 2018).

After the considerable shift in England for children and young people that regulated the provision of special educational needs and disability services, children with SEND no longer have statements concerning their educational needs but Education Health and Care Plans (EHC). (DfE, 2014). In addition, the Code of Practice (2014) provides an overview of the range of SEN and divides them into four broad areas. The first area has to do with communication and interaction. The second regards cognition and learning. The third considers the child's social, emotional and mental health difficulties and the fourth considers the child's sensory and/or physical needs. Moreover, the SEND Code of Practice (2014), influenced by the rights model of disability, states that all children and young people are entitled to an education that enables them to progress in life so they can do their best, live fulfilling lives as confident individuals and successfully advance into adulthood, whether into employment, further training or higher education (DfE, 2014). The revised SEND Code of Practice 0-25 focuses on the involvement of children in decision-making and reinstates evidence-informed strategies for children's participation and engagement in schools (Kennedy, 2015).

The present research identifies the FS approach as a learning approach that is less target-driven and more process-driven (Harris, 2017). FS is an approach that can be used in formal education to accommodate higher involvement levels of pupils with SEND in the outdoor setting. The FS approach follows the signalled legislative and policy changes of the reformed SEND code of practice. As a child-led approach to learning, FS can be used as a school-based intervention as it considers a) the child's views, wishes and feelings and b) the centred role of the child in 'participating as fully as possible in decisions; and being provided with the information and support necessary to enable participation in those decisions' (Code of Practice, 2015, p. 19).

Figure 2 presents the conceptual research model:



*Figure 2: Conceptual framework*

## Conclusion

This chapter suggested that the environment we live in can have a major impact on our development and any change in our environment can shape changes in our behaviour. Environmental education is a key component of outdoor education and has been defined as the process of recognising values and clarifying concepts to develop skills and targeted behaviours. For environmental education to be successful requires the active participation of its pupils. In the same way, outdoor education is a pedagogical field that reinforces social interactions through peer-to-peer cooperation.

Outdoor education offers restorative effects, positive changes in behaviour and academic skills and cognitive benefits (Kaplan, 1995; Kellert & Wilson, 1995). Outdoor education has been reduced, however, as an approach to learning in schools (Gill, 2014). Previous research into FS (Vandewalle, 2010; Roe & Aspinall, 2011b) has also been supportive of such benefits for outdoor

education including risk-taking, increased physical activity, social skills and language and cognitive development for the pupils who take part in FS.

Previous links to FS and SEND have identified positive impacts of FS on people with SEND. These include anger management, reduced stress and positive effects on the mood of the pupils and strengthen the argument for the therapeutic effect outdoor education has on pupils. Even though outdoor education has been examined previously, the picture is still incomplete due to the unexplored effects of outdoor education on pupils. Therefore this study will examine how outdoor education can facilitate learning for pupils diagnosed with learning difficulties.

## Chapter 4 Methodology

### Introduction

This chapter discusses the theoretical perspectives of research design and methodological considerations that provide insights into the most appropriate research methods for this study. A mixed-methods case study methodology was adopted to explore the impact of FS on the motivation of pupils to get involved in the learning process. The chapter begins by presenting the ontological assumptions adopted for this study, in particular, the rationale behind the philosophy of critical realism. The chapter continues by discussing the research design and the methodological considerations for the study as a whole. In more detail, the discussion begins by inquiring about what learning has been thought to be.

This chapter describes how the research took place and which research tools were used. Furthermore, this chapter considers the ontological assumptions and gives information regarding the sample used. The chapter also outlines the school in which the case study took place.

Moreover, the chapter discusses how we acquire learning by critiquing key learning theories; it then progresses through methodological approaches to building new knowledge. This discussion ends with practical techniques and methods of collecting data. In doing so, a case is built for the adaptation of the research design, as an appropriate research strategy capable of collecting the required data for analysis and evaluation to answer the specific research question.

As the main aim of creating a friendly environment in schools is interactive learning (Sealy, 2001), which stimulates the pupils to participate in the learning process actively, this research explored how an interactive teaching style can stimulate pupils to take an active role in the classroom. The research took place in an Eco-School awarded a Green Flag by the international organisation Eco-Schools in a county in the east of England, focusing on pupils with learning difficulties in primary education. More specifically, the research tried to answer how outdoor environmental education may impact children's learning attitudes, specifically children diagnosed with learning difficulties. Also, the research investigated the role of this learning approach in improving student involvement and increasing inclusion.

This chapter discusses a case study methodology. The research goal is to explore the impact of an FS on pupils in a mainstream school in the east of England, including pupils with learning difficulties. The LSI (Laevers, 2005) was used on two groups of five pupils (ten in total) in two different classes, Year 3 (Y3) and Year 4 (Y4), at the same primary school. It was triangulated with observational evidence, five semi-structured interviews with teachers in that school and questionnaires that were filled in online by 14 parents from the two classes.

## The adoption of a critical realism lens

To answer my research question, I adopted critical realism as the set of my ontological assumptions. Additionally, I assume the position that reality is 'real' but only imperfectly and probabilistically apprehensible to us, as there will always be the unknown. Hence, triangulation from many sources is required for one to become more aware of it. Therefore my research design adopts three different research tools in an embedded case study design. Triangulation of evidence is also a technique to ensure construct validity (Denzin, 1978; Burgess, 1984; Marshall & Rossman, 1990; Patton, 1990) since it allows a stronger substantiation of constructs and/or hypotheses that can assist in validating the research findings (Bonoma, 1985).

I arrived at this position because the critical realist research methodology of qualitative case studies can be oriented as a process. It does not deal with cause and effect relations but rather with hidden or underlying causal tendencies (Bhaskar, 1978; Tsoukas, 1989), in correlation with the fact that my research goal is to discover and describe knowledge affixed to social science (Outhwaite, 1983). In addition, case study research through a critical realist lens can inform theory development (Bonoma 1985; Eisenhardt, 1989; Yin, 2014). A case study design can also provide the necessary resources to build a theory that can contribute to existing knowledge through various perspectives in its analysis (Glasser & Strauss, 1967).

Within the critical realist paradigm, the use of a case study methodology is found suitable when particular events are focused on a situation or context (Merriam, 1988; Eisenhardt, 1989), when the researcher seeks contextual meaning within a bounded system (Stake, 1978; Bonoma, 1985; Yin, 2014) and when the social, organisational settings are intricate (Morgan & Smircich, 1980; Kaplan et al., 1986; Orlikowski & Baroudi, 1991; Parker, 1993). The case study design with a critical realist perspective is justifiable for the nature of the case study I conducted. The study took place at a school in which particular events occurred and focused on specific situations and contexts (Merriam, 1988; Eisenhardt, 1989). In addition, the social and organisational setting in the school was intricate (Morgan & Smircich, 1980; Kaplan et al., 1986; Orlikowski & Baroudi, 1991; Parker, 1993) because I sought to contextualise the nature of outdoor education within the bounded system of inclusion in a mainstream school (Stake, 1978; Bonoma, 1985; Yin, 2014, Wynn & Williams, 2012; Mingers, 2015). As critical realism describes reality, this leads me to believe that it can be approached retroductively. Thus, I used a case study strategy, and to cross-section the time horizon I implemented a mixed-methods design and used the described techniques to collect data.

As previously noted, this study adopts a mixed-methods approach focused on combining different sources of data sets, aiming to understand and enlighten the research question. In particular, I used a case study approach (Yin, 2014): “The case study is preferred in examining contemporary events, when the relevant behaviours cannot be manipulated” (2014, p. 7).

The primary research tool used is the LSI, an observational tool that measures pupils’ involvement levels. The questionnaires and the interviews conducted were embedded in the research design to gather information on parents’ and teachers’ stances and opinions, respectively, regarding environmental education and FS (Yin, 2014). Although case studies have been frequently used in qualitative research, they do not have a legitimate status as a social science research strategy, according to Yin (2014), as they lack well-defined and structured protocols. A case study research methodology “relies on multiple sources of evidence to add breadth and depth to data collection, to assist in bringing a richness of data together in an apex of understanding through triangulation, and to contribute to the validity of the research” (Yin, 2014, p.7).

The data sets contain interviews with the teaching staff, observations of children who participate in FS activities that target their participatory levels and questionnaires to parents that investigate their stances and views on environmental education and outdoor education. This approach combined a variety of sources including documentation and interviews.

### What critical realism can offer

Critical realism can provide solutions to problems ‘besetting contemporary educational research and pedagogy’ (Shipway, 2004, p. 1). It is a philosophy of science that can be used to reaffirm what education should be about. Within Bhaskar’s (2008) Dialectical Critical Realism (DCR), autonomy is an important ‘theoretical-practical bridge concept’ (2008, p. 395). Autonomy in DCR presupposes freedom of choice. In other words, if I have an absence of choice, then I can have no autonomy. Thus, only when I have a choice can I be emancipated. Notably, Bhaskar has called autonomy the bridge to freedom. In exploring this idea, he outlines self-determination as a necessary condition for self-realisation. He then develops the argument that only an emancipated self can become self-determined and therefore autonomous. Hence, this study will examine within the empirical domain (Bhaskar, 1978; Outhwaite, 1983; Tsoukas, 1989) the obtainable experiences of pupils by direct observation, using the LSI (Laevers, 2012).

Bhaskar claims a link between autonomy and the coherence of theory and practice in education theory, which he calls ‘absolute reason’ (Bhaskar, 2008, p. 281). However, pupils in the compulsory years of education, in our case in primary schools, do not have access to ‘absolute

reason'. For Bhaskar, young pupils may lack the cognitive, empowered or dispositional components of rational agency. As a result, this issue raises interesting questions for educational researchers who work with pupils who do not possess all the criteria for rational agency. These can include questions such as the time when pupils become fully rational (Shipway, 2007), what the best way is to facilitate differing timelines of emerging rationality, or whether emancipation is about structures that change, and if so, how teachers can know what structures they should change to accommodate 'pre-rational' pupils- In response to these questions, I argue that a dialectical critical realist approach to education in compulsory schooling years can provide useful guidelines for the custodial work teachers have to do to help pupils transcend to cognitive emancipation.

### The third methodological movement

In general, research can be divided into two main categories, quantitative and qualitative (Kvale, 1996). However, the 'third methodological movement' (Tashakkori & Teddlie, 2003, p. 5) is mixed-methods research. It has also been described as a combination of qualitative and quantitative approaches. This approach has also been called the 'third research paradigm' (Johnson & Onwuegbuzie, 2004, p. 15) and has been said to provide 'an intuitive way of doing research that is constantly being displayed through our everyday lives' (Creswell & Plano Clark, 2011, p. 1).

The three research tools used in this research were observations, interviews, and questionnaires. The three research tools intended to give priority to both quantitative and qualitative data collected, and therefore promote the analysis of both, to be persuasive and rigorous as they frame the research procedure within philosophical worldviews and combine them into the research design (Creswell & Plano Clark, 2011).

Pollard (2007) claims that educational research has contextual, conceptual, methodological and transformational challenges as it offers a wide range of possible research strategies that are continually increasing in number. McIntyre (1996, p. 20) goes further, regarding educational research and claims that in many cases educational researchers are in a sense 'afraid of it'. An essential factor for gathering valid and reliable data from a school environment is the adaptation of an appropriate research methodology and its corresponding research tools.

The above two research categories reflect different epistemologies and representation types since every tradition has its ways of interpretation, data collection, validity and reliability. Phillips (1995), however, opposes the above argument. He claims that in the end, the gap

between qualitative and quantitative research is not vast, given that all types of research have a fundamental epistemological similarity, which is their purpose. Research is a process that aims to answer a question. Trochim and Donnelly (2001) go even further and underline that the blind adaptation of one data collection method leads to the downgrading of the research, a problem that is complex and will not be answered by a simple dichotomy. Regardless of both of the previous theoreticians, however, both paradigms are based on rich and various traditions that originate from various epistemological branches and have both been used in an extensive variety of research projects.

The quantitative-qualitative discussion has been the object of much debate among researchers. Some claim that the two methodological approaches are completely different and distinctive, while others focus on their common characteristics. Denzin and Lincoln (2002), for example, underline fundamental differences between quantitative and qualitative research. The first has to do with the perception of an objective reality, and if such a reality exists, if and how it can be conceived, studied and interpreted. The second issue between quantitative and qualitative research for Denzin and Lincoln (2002) is who or what will be studied. The third issue is which strategies will be used, and lastly, Denzin and Lincoln (2002) focus on which research methods or tools will be used to collect and analyse data.

Many previous educational research studies used a mixed-methods approach. An example is research conducted by Mac and Ghail (1995), who researched the stance of marginalised pupils using quantitative and qualitative methods. At the beginning of his research, he collected quantitative data; later, he used interviews and observations. He claims that the use of pluralism in methodological paradigms can lead to a more precise and holistic view of social procedures that intervene in interactions between pupils and teachers. A combination of the quantitative and qualitative approaches is also advocated by Bösner et al. (2015), who used a mixed-methods approach to evaluate student satisfaction and development of skills and knowledge. Bird et al. (1999) also used a combination of quantitative and qualitative approaches, specifically a mixed-methods design to investigate the efficiency of an adult learning programme. Bird et al. (1999) used questionnaires, interviews and observation and recommended the use of both types of data since their combination achieves more fruitful and more precise research.

The underpinning philosophy that led me to this data collection methodology lies within critical realism. Critical realism is largely based on Bhaskar (1978; 2010; 2013; 2016) and other researchers such as Archer (1998), Fleetwood (1999), Lawson (1997) and Sayer (1992). It is often seen as the middle point between empiricism and interpretivism as it embraces various

methodological approaches from different philosophical stances by taking 'a critical stance towards the necessity and validity of current social arrangements without following the extant paradigms' assumptions at face value' (Mingers, 2001, p. 248). From a critical realist perspective, while things are mind-independent, our observation of events is nevertheless theory-laden. By this, I mean that the stool in front of me is there and remains there when I leave the room (mind-independent), but I might consider it a table rather than a stool if I choose to put my cup on it rather than sit on it. In this sense, critical realism embraces both empiricism and interpretivism.

Even though consequences cannot be induced, deduced or predicted using critical realism, the process of illuminating and thickly explaining structures and mechanisms that govern human action and their operation is to some extent feasible and happens retroductively.

Fleetwood (2014, p. 210) suggests that:

*"a mechanism is basically the way of acting or working of a structured thing...Structured things [physical objects or social processes] possess causal [or emergent] powers which, when triggered or released, act as generative mechanisms to determine the actual phenomena of the world".*

Recent work has also been developed for conducting case studies within the ontology of critical realism, which highlights the value of critical realism as the underlying theoretical framework for mixed-methods research (Venkatesh et al., 2013). The reproductive approach in research embraces a variety of methods (McEvoy & Richards, 2006; Mingers, 2005; Wynn & Williams, 2012) in which both quantitative and qualitative approaches can be combined to identify mechanisms that may cause experienced events.

## Ontological assumptions of this research

Critical realism is a philosophy not just about the context of discovery but also for the context of justification that arose in the UK during the 1970s and included ontological and epistemological elements that are alternatives to positivism, idealism and relativism. Bhaskar (1978) influenced and presented this philosophical stance. It is a naturalist ontology that is applicable across the sciences and the social sciences. It is a theoretical framework that could be capable of guiding mixed-methods research (Mingers, 2004; Venkatesh et al., 2013). Considering that the deployment of empirical research methods demands an underpinning meta-theory, and also that an objective reality exists independently of an external observer, this fundamental realist view acquires absolute knowledge of the way that reality works feasibly. From a critical realism perspective, however, ontology presupposes epistemology. In other words, in critical realism,

epistemology is subordinated to ontology. Therefore, critical realism accepts the epistemic fallacy of the unknown. Hence, within critical realism, absolute knowledge of the way reality works is not feasible. In addition to this, ontological assumptions influence the way empirical data are collected and analysed about the social world (Scott, 2005).

For Bhaskar (1978), humans have to learn (as babies) to perceive things and events; thus our perceptions can change or be mistaken. Therefore, our perception of reality can change over time depending on what we currently know about it. Bhaskar (1978) calls this the transitive domain of reality. At the same time, humans as scientists have to be trained to make observations correctly. This implies the existence of a domain of events that are independent of our perceptions of them, which Bhaskar (1978) calls the intransitive domain of reality. As a realist philosophy, critical realism has a strong emphasis on ontology (intransitive domain) and advocates for the idea of a reality that is independent of the external observer (Archer et al., 1998; Bhaskar, 2010; 2013; 2016). The generation of knowledge, however, for critical realism is a human activity and depends on specific details and mechanisms of its production (transitive domain). This generation can establish facts, theories, methods and techniques of study that a researcher can use at a particular time and place to articulate knowledge in the two domains. As Archer et al. (1998) state, 'it is a socially produced knowledge of a natural [human]-independent thing' (1998, p. 65).

Apart from the transitive and intransitive domains of knowledge, critical realism adopts a stratified ontology split into three domains: the real, the actual and the empirical domains (Bhaskar 2010; 2013;2016). For critical realism, the domain of the real includes both objects and structures with causal powers and liabilities, which in turn result in mechanisms that might not be visible. Lawson (1997) clarifies this by stating that:

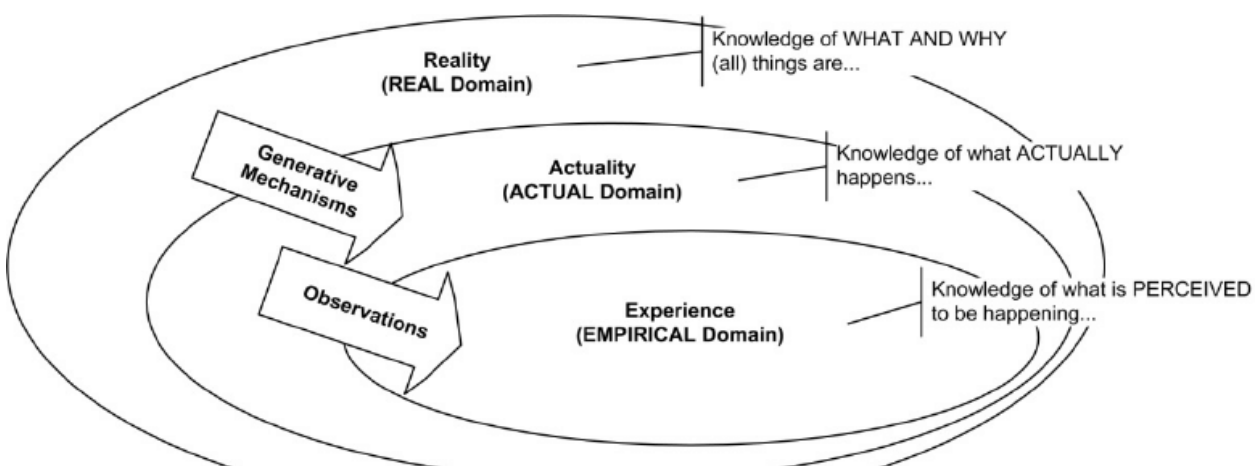


Figure 3: Critical realism concept adopted by Alexander, 2013

a mechanism is basically the way of acting or working of a structured thing....Structured things [physical objects or social processes] possess causal [or emergent] powers which, when triggered or released, act as generative mechanisms to determine the actual phenomena of the world (1997, p. 21).

Notably, these emergent powers (or liabilities in the sense that a liability is a special kind of power, one that is to be influenced or to emerge) cannot be reduced to those of their constituents, as we cannot, for example, disaggregate the power of people to think by reference 'to the cells that constitute them, as if the cells possessed this power too' or the power of water to oxygen and hydrogen as these belong to a different stratum (Sayer, 1992, p. 118).

Alexander (2013), to capture critical realism within a diagram, states:

Critical Realism is a philosophy of science that recognises both objective and interpretive perceptions of reality and is in fact premised on the notion of the existence of a structured real world where knowledge is socially produced. The Real Domain is considered to host the Generative Mechanisms that create 'reality' in the real world or Actual Domain. The Actual Domain is where events happen whether we experience them or not, referred to as factual events, and is synonymous with the world as we know it. Within the philosophy of Critical Realism, experiences are considered to take place in the Empirical Domain. The causal mechanisms are the structures that explain outcomes resulting from actions within a given context in the Empirical Domain. The Generative Mechanisms within a 'social setting' could be thought of as the 'social forces acting within the social structures' to deliver social experiences from which knowledge is constructed. These forces are referred to as the Generative Mechanisms or Causal Powers that emanate from the Real Domain and cause effects in the Actual and Empirical Domains, which collectively defines Critical Realist ontology or conception of reality (2013, p. 8)

These generative mechanisms do not have to be constantly empirically observable; their potentialities, however, may still exist whether they are exercised or unexercised (Bhaskar, 1998). Hence, the actual consists of a subset of the real and the events generated from both types of mechanisms (exercised or unexercised), while the empirical for critical realism refers only to the observable experienced events and change as it bears witness to what constitutes the mechanisms that cause the experienced events.

The primary objective within critical realist research is to 'use perceptions of empirical events to identify the mechanisms (the ones that can be either observed or experienced) that give

rise to those events' (Volkoff et al., 2007, p. 835). Therefore, in the case of critical realism, causality is not about a relationship between different events but rather about the realisation of the processes and conditions under which 'A' causes 'B', if at all. Causality in this context considers the causal power of the entity that together with the causal power of another entity causes the experienced event. Notably, however, Danermark (2002) suggests that regardless of which method is used, the common principle is that the 'foundation of our knowledge [in the transitive domain] (see p. 91) is the empirical domain' (Danermark, 2002, p. 155).

For Volkoff et al. (2007), events can also derive from social structures, which can respectively be influenced by other events. In this case, 'the modification of previous structural properties and the introduction of new ones or the reinforcing of existing structures' (2007, p. 835) is called reproduction. Critical realism, however, proposes that social structures are historically specific since they are contingent in both space and time. Because of their nature, they resist change, so that at one point in time, agents interact with structures that they did not create (Sayer, 1992; 2004).

Critical realism accepts that science is a social product and makes an essential distinction between an intransitive and transitive dimension of knowledge. The first refers to the world as it is. It includes objects that are generally intransitive, objects about which our knowledge does not change, and refers to real objects and structures, mechanisms and processes, facts and capabilities of the world that in their biggest part are completely independent of humans (Bhaskar, 1978). The transitive dimension consists of our knowledge about the world.

Critical realism accepts that some things in the intransitive dimension can gradually become known through the interaction of human theory and experience of the world. The production of knowledge, therefore, does not need a simplistic approach and access to reality but a somewhat more complex and synthetic interaction through which theoretical categories inform and are informed through the collected empirical material. On the other hand, there is the 'epistemic fallacy' that there will always be unknown unknowns. In this way, knowledge claims or social constructs are being produced. Some of those claims are better and more precise than others, and hence some of those claims offer a 'best shot' when explaining the world. Therefore, for critical realism, even though we might never be capable of knowing reality as it is, we can have a judgmental rationalistic approach to adopting one theory over another. Thus, from a critical realist perspective, we can never definitively truly know reality. Moreover, critical realism is based on differentiated and stratified ontology (Archer, 1998; Collier, 1994).

Critical realism makes an ontological distinction between the empirical, the actual and the real domains of reality. The first refers to what can be observed, the experience, and therefore the empirical knowledge that can be disorientating through to weakness and limitation of senses. The second refers to facts that occur independently of whether individuals have or do not have their experience, while the third is a deeper level that produces the facts and consists of mechanisms. These mechanisms produce a fact that could be empirical data when individuals experience and observe it. This fact suggests the existence of a gap between experience and understanding, a gap between what is happening and the deep dimension where the mechanisms occur (Danermark, 2002).

The mechanisms that exist in reality, and therefore exist independently regardless of whether we experience them or have knowledge about them, are called generative mechanisms in the sense as noted, they possess forces of causation that produce or create events. Moreover, the mechanisms that cannot be seen by the observer can be circumstantial or possess forces of causation that can be active (or not) and that have to do with a series of random factors that are relative to each other and their complex and dynamic interactions (Sayer, 1999; 2004). The acknowledgement that these mechanisms can exist with or without being active and the fact that they are not always visible for an observer to notice leads to the adoption of the assumption that what has to happen or is known is not limited to what could have happened or has happened. In other words, what we perceive as reality and how things happen can be different from what reality truly is and how things truly happen.

For critical realism, causality is not synonymous with relating different facts (usually in the form of statistical generalisation, a characteristic of quantitative methods). The goal of epistemic research for critical realism is to identify the foundational mechanism that produces the empirical facts, not the empirical facts on their own. Instead, a critical realism explanation would draw upon the causative mechanisms of reality and how these operate within the context, and to the discovery of whether they are active or not and how they function or the capabilities of the mechanisms to produce particular trends or norms that could be observed in empirical facts or findings (Sayer, 1999).

Another semantic differentiation within the philosophy of critical realism is that of 'closed' and 'open' systems. A closed system offers the possibility to experiment, to isolate a mechanism and thus to show the results of this isolation. On the other hand, when research occurs in open systems with multi-defining mechanisms, stable connections between a particular cause and effect cannot be established (Robson, 2016). According to Bhaskar (1978), both open and closed

systems have three domains (empirical, actual and real), where the domain of real is bigger or equal to the domain of the actual, and the last is bigger or equal to the domain of empirical.

As previously noted, the scope within critical realism lies in discovering the mechanisms that produce an active phenomenon, and the understanding of their interactions or vice versa, the hypothesis of the existence of a mechanism and the scope of revealing how it manifests. Notably, the researcher could discover that the mechanism is not being manifested, either because it is not active or because of the activation of other, opposing mechanisms. Hence the importance of the context, especially in social sciences, and the rejection of the question regarding the frequency with which a mechanism is empirically observable. Moreover, epistemic research in critical realism is a spiral process of discovery and understanding, since, on the one hand, the explanation of a phenomenon through a deeper level of understanding means that this level becomes a new phenomenon, which calls for exploration. On the other hand, the discovery and understanding of a deeper level could demand a review and perhaps a new understanding of the original phenomenon.

Another important aspect of critical realism as an explanatory critique (Archer, 1998) is the distinction between a 'horizontal' explanation and a 'vertical' explanation. The first distinguishes facts from mechanisms and previous causations or stimulations and the second distinguishes one mechanism from another (Carter & New, 2004). Both of the previously noted aspects are important in distinguishing mechanisms so that the research findings and suggestions can be more accurate. These aspects underlie the importance of both width and depth of knowledge. At a horizontal level, explanations 'move from the level of the happenings and phenomena to be explained to that of the mechanisms and structures which generate them' (Carter & New, 2004, p. 8). At a vertical level, one mechanism or structure is thought to be the product of another more basic one, *ad infinitum* (Carter & New, 2004).

Critical realist ontology also considers that generative mechanisms exist at different levels (Bhaskar, 1978; Collier, 1994; Outhwaite, 1998; Scott, 2005). These levels, even though they are not entirely independent of one another, have unique characteristics that cannot be traced back to another level. First of all, a lower level is the assumption of existence and can offer only a partial explanation of another higher level. For instance, there is no biological life without cells, or cells without atoms and so on. At the same time, however, every level is relatively autonomous about another level. According to critical realism, phenomena of higher levels have roots in more basic phenomena, and at the same time, they emerge from them. This, in turn, leads to the conclusion that new mechanisms are created at these higher levels. Also, the emergence of a higher level

from a lower level does not exclude that these higher levels influence the lower levels. By using this dynamic concept of a layered reality, which is emergent, levelled and open to changing trends from above and below, critical realism avoids reductive and deterministic views. Instead, the ontology of critical realism signifies that natural, biological and chemical processes are necessary conditions for the existence of a social world but at the same time that the social world has its properties that are not given by the natural world.

Collier (1994) also tries to describe these different layers. For this thesis, a simplistic but efficient way to describe the layers in terms of academic disciplines is molecular sciences, followed by biological sciences, psychological sciences, and social sciences. The difference between the social and the natural world is important (Wilson, 2003). On the one hand, there is the natural world, which consists of lower levels. These lower levels are hierarchical and structured. In this context, a lower level can be a pre-existing condition of a higher level. Hence, natural sciences can mimic a closed system through experiments. On the other hand, this does not apply to the social world with its different interacting levels: an open system that acts with mutually interactive entities and causal mechanisms that cannot be represented as closed systems. In this sense, upper levels of the social world consist of 'environments' that have a 'causal impact' on the phenomena of the lower levels and vice versa. Moreover, objects in the natural sciences are produced naturally and are defined socially. For example, natural resources have natural and social generative mechanisms since they consist of means to satisfy human social needs, while objectives of social sciences are produced and defined socially.

The sociologist Lidskog (2001) also made an interesting point. When talking about critical realism, he saw, at its very base, an independent materialistic reality that consists of nonlinear and mutually interactive causal forces. Hence Lidskog suggested that the crucial reintroduction issue of nature (the natural world can exist independently of the social world, but the opposite is not possible) in sociology is feasible through critical realism. However, the application of Lidskog's suggestion, at least from a sociological perspective, has proven to be problematic for a series of ontological explanations due to the asymmetry of simplistic realism (Carolan, 2005a). This is because within critical realism the reintroduction of nature is feasible by a non-deterministic theory (Carolan, 2005b). The explanatory (social) critique adopted by critical realism leads to the suggestion that the possibility of a transformative reality exists, through the discovery of illusions or unwanted stances and ultimately through the deactivation or the removal of mechanisms that cause problems. Critical realism conflicts with what 'appears to be' in society (Corson, 1990) and has a liberating perspective. This dynamic of critical realism is linked to the

legacy of Marxism and is according to some theorists (Carolan, 2005a) in a way similar to Habermas (1997).

On the one hand, critical realism also accepts a distinction between the way things exist and knowledge claims for them. On the other hand, it does not assume a one-to-one correlation between claims of knowledge and reality (correspondence theory). Consequently, for critical realism, claims of knowledge and theories differ in the degree to which they correspond to the (real) system they suggest they reproduce while the development of knowledge is not considered to be moving linearly to absolute truths.

This philosophy of the ontology of critical realism also takes into consideration the importance of the context in which knowledge is produced and, in this spirit, it agrees with social constructivism that no neutral access to the world exists (Sayer, 1999). As a result, since the real can be known through the always-twisted and changeable lenses of culture, history and practice, reality is always subjected to observations that are in turn not free of a value system. Therefore, claims of knowledge can be questionable, disputable and renewed. As a result, knowledge claims should be open to critique and improvement. This element is what makes this philosophy of realism 'critical'.

It becomes clear that critical realism adopts an open and complex system of critique of existence, as a stance of reality, where many mechanisms and conditions can co-exist. Giddens (1979) suggests that social phenomena are concept-dependent and therefore need to be understood interpretively. In contrast to interpretivism, however, critical realism does not exclude a relational intransitive domain in social structures, since social activities and human attributes rely on causally and effectively social structures (Sayer, 1999). Strong and Volkoff (2010) also oppose interpretivists, since the last do not succeed in relating discourses to underlying social structures that influence the behaviour of agents (Granovetter, 1985).

For critical realism, causality is explained by the adoption of a mode of inference in which events are examined and explained by 'postulating mechanisms which are capable of producing them' (Sayer, 1992, p. 107). Danermark (2002) calls this way of thinking 'thought operation', while Bhaskar (2016) described it as retroduction. However, both of these theoreticians, despite what they call this process, suggest that it can allow the researcher to move between the empirical phenomena. This process emerges through events upon the creation of explanations in a manner that allows an ontological depth.

Notably, the stances of critical realism also differ from an inter-discipline research approach, which aims to approach complex problems through some data fulfilment, general hypothesising or the compilation of methods from different scientific disciplines. The acceptance of critical realism, for the existence of layered reality, differentiates between the perception of multidiscipline research and its epistemological application. First of all, critical realism is not a flat ontology that is limited only to experiential observations. Since the examined phenomena are produced by mechanisms that act on different levels and produce the phenomena non-deterministically, the understanding of their interactions and ultimately the understanding of what constitutes them make critical realism primarily a dialectical ontological approach (Bhaskar, 2008). In this dialectic approach, critical realism lays the way open for dialogue and compromise between seemingly incompatible systems.

However, while interdisciplinary approaches can focus on epistemological questions, they focus more frequently on methodological debates (Bhaskar, 2013). Such a stance could be regarded as a pragmatic view regarding the issue. However, fundamental stances regarding reality should be clear, as Archer (1998) notes; the ontological stance defines methodological approaches that will be used in future research and, in turn, will lead the researcher to explanatory theories about the focused phenomenon. Hence, a discussion regarding ontological approaches is as productive as it is vital to the research.

*Table 2: Methodological principles of critical realism adapted from Wynn and Williams, 2012, p. 797*

<b>Critical Realism Principle</b>	<b>Ontological and Epistemological Basis</b>	<b>Evaluation Criteria</b>
<p><b>Explication of Events</b> Identify and abstract the events being studied, usually from experiences, as a foundation for understanding what happened in the underlying phenomena.</p>	<ul style="list-style-type: none"> <li>• Stratified ontology</li> <li>• Mediated knowledge</li> </ul>	<ul style="list-style-type: none"> <li>• A thick description of the case 'story', including actions and outcomes</li> <li>• An abstracted sequence of events (including the experiences of participants and observers)</li> </ul>

<p><b>Explication of Structure and Context</b></p> <p>Identify components of the social and physical structure and contextual environment, along with relationships among them, critically redescribed from the actor's viewpoint into a theoretical perspective.</p>	<ul style="list-style-type: none"> <li>• Stratified ontology</li> <li>• Open-systems perspective</li> <li>• Mediated knowledge</li> <li>• Unobservability of mechanisms</li> </ul>	<ul style="list-style-type: none"> <li>• Description of the structural entities, constituent parts, and contextual conditions existing in the case</li> <li>• Identification of the relationships among the entities</li> <li>• Explication of changes to the structure</li> <li>• Description of the resulting emergent properties</li> </ul>
<p><b>Retroduction</b></p> <p>Identify and elaborate on powers or tendencies of structure that may have interacted to generate explicated events.</p>	<ul style="list-style-type: none"> <li>• Emergence</li> <li>• Focus on explanation</li> <li>• Explanation via mechanisms</li> <li>• Multiple explanations</li> <li>• Unobservability of mechanisms</li> </ul>	<ul style="list-style-type: none"> <li>• Identification of a set of plausible candidate causal mechanisms</li> <li>• Logical and analytical support for the existence of proposed mechanisms linking the structure to events</li> </ul>
<p><b>Empirical Corroboration</b></p> <p>Ensure that proposed mechanisms have causal power and that they have better explanatory power than alternatives.</p>	<ul style="list-style-type: none"> <li>• Independent reality</li> <li>• Stratified ontology</li> <li>• Unobservability of mechanisms</li> <li>• Multiple explanations</li> </ul>	<ul style="list-style-type: none"> <li>• Analytical validation of proposed mechanism based on case data</li> <li>• Assessment of the explanatory power of each mechanism relative to alternative explanations</li> </ul>

		<ul style="list-style-type: none"> <li>• Selection of the mechanism(s) that offer(s) the best explanation</li> </ul>
<p><b>Triangulation and Multimethods</b></p> <p>Employ multiple approaches to support causal analysis based on a variety of data types and sources, analytical methods, investigators, and theories.</p>	<ul style="list-style-type: none"> <li>• Independent reality</li> <li>• Mediated knowledge</li> <li>• Unobservability of mechanisms</li> <li>• Multiple explanations</li> </ul>	<ul style="list-style-type: none"> <li>• Multiple theoretical perspectives</li> <li>• Multiple analytical and methodological techniques</li> <li>• Variety of data sources and types</li> <li>• Multiple investigators</li> </ul>

Critical realism is epistemologically pluralistic, in that it can find suitable methods when trying to discover the mechanisms that produce the observable facts. Thus, the research can use different techniques and ultimately gain access to different views of the same phenomenon (Olsen, 2004). To strengthen the use of a mixed-methods research design through a critical realism lens, Olsen (2004) claims that the researcher can use quantitative as much as qualitative methods: This will enhance the empirical data, which will, in turn, be useful in elaborating the phenomenon researched both horizontally and vertically. For this reason and also according to Wynn and Williams' (2012) suggestion, this research will make certain assumptions in selecting methods based on the ontology of critical realism.

In social sciences, critical realism distinguishes between the depth and breadth of research designs (Sayer, 1999) and despite the usefulness of quantitative research, apart from descriptive statistics (Sayer, 1992), it often tries to bridge the epistemological gap between the two research approaches in a triangulated, mixed design, whose main criteria is its consistency, by telling the same story. In other words, consistency occurs by shedding light using different research tools but the same questions. Such a design is not only feasible but capable of expanding research in fields that traditional methods cannot access (Sayer, 1992; 1999; Archer; 1998; Danermark, 2002).

However, a research design that adopts critical realism has several consequences: a) the results that occur in a context cannot be applied the same way in a more complex context, b) the empirical manifestations of mechanisms can be studied as likely tendencies and not as normalities, and c) the analysis will serve to describe parts of social reality. Hence, it becomes clear that an interdisciplinary design concerns the common ground between different disciplines' design studies of a complex phenomenon. Moreover, this approach concerns how an event manifests at the various levels of reality and ultimately the effort of achieving a satisfactory or, as Fleetwood (2014) puts it, a 'thick' explanation of the phenomena through the existence and activation of multiple different mechanisms. Notably, according to Wynn and Williams (2012), '...tendencies go beyond powers to distinguish specific classes of things from others. Whereas powers designate possibilities, tendencies describe those actions that are characteristic or typical of a given... type of thing' (2012, p. 791). Wynn and Williams agree with Bhaskar (2013), who suggested that 'All men... possess the power to steal; kleptomaniacs possess the tendency to do so' (2013, p. 230). Therefore, while all kleptomaniacs tend to steal, the normality is not that all men steal because they have the power to do so or even that all kleptomaniacs act on their tendencies. Wynn and Williams (2012) explain that tendencies do not occur as actions in some law-like regular pattern, but as a possible, if not plausible, course of action. Moreover, according to Manicas (1991), what is expected to occur, emerging from an enacted tendency, may not result in an event in the actual domain as other mechanisms may also be enacted within the given structure in such a way as to prevent or alter the realisation of a particular causal effect. As such, 'a tendency may never actually be realised' (Manicas, 1991, p. 41).

Critical realism opposes the notion that all disciplines can and should be merged into one or be united in one methodological context as that would mean the downgrade of reality to only one layer. Scientific disciplines exist because reality is layered and differentiated, and therefore different scientific disciplines and fields focus on different levels and have developed different approaches. Hence, the researcher must develop and use different concepts and theories to explain and understand the manifestations of the studied phenomenon in the respective level of reality.

Danermark (2002) also notes that for critical realism the fulfilment of the multidiscipline research process has to do with the fulfilment of knowledge through connections, as an effort to achieve a more holistic approach to the studied phenomena. A multidiscipline approach in research for critical realism comprises a democratic activity where research and discussion between researchers occur without a 'prioritised' academic field in which all approaches are being

treated with tolerance and respect. Authentic holistic knowledge demands cooperation among researchers from different academic backgrounds since it becomes clear that the understanding of what truly happens in one layer of reality comes when the researcher can foresee how the mechanisms in the studied level operate in other levels and might affect the result in the active layer.

## Research question

An outdoor learning environment, as mentioned earlier, can be a complex reality and a frame that ascends the relationship of the child that experiences it with nature, “since it provides opportunities for exploration, connection to the natural, cultural, historical and social inheritance of its community” (Stavrianos, 2016, p. 416). In the same context, in 2014, Gill (2014) conducted a literature review of 32 Stage One and 71 Stage Two studies regarding the topic of children and nature published from 2003 to 2010. He claims this topic “has been surveyed in different ways by researchers with various starting points, interests and approaches however it would still seem that some of the qualitative features of our relationship with nature may be underemphasized” (Gill, 2014, p.11). Even though “the body of empirical evidence is growing, the picture is incomplete” (Stavrianos, 2016, p.416). In his review, Gill (2014) claims that “there is well-supported evidence that suggests that benefits from children’s engagement with nature arise, but many questions remain that could be further explored” (Gill, 2014, p.11) within the context of future empirical studies that include effects and influences of adults on children, how these benefits are shaped by different adults and how benefits vary for children with different levels of ability, age and gender.

Initially, the research design and the tools used were discussed and piloted, following Bozic and Crossland’s (2012) suggestions, with the help of Y3 and Y4 teachers. The researcher met and conducted a panel interview with the two class teachers to ensure the appropriateness of the research questions to the specified context. The research tools focused on questions about the adjustment and the level of co-existence of outdoor education in formal education. The main research question the project addressed is:

✚ How can Forest School support inclusive practices?

The research adopted an embedded mixed-methods design (Yin, 2014) to obtain complementary data on the same topic (Morse, 1991). The intent behind this approach was to bring together the various strengths and non-overlapping weaknesses of quantitative methods with those of qualitative methods (Patton, 1990). This decision agrees with Creswell and Clark’s

(2011; 2018) justification of the use of this design since collecting and analysing both quantitative and qualitative data are of equal value in understanding what outdoor education can offer in the learning process of pupils, keeping in mind that the window period for collecting the data in the school is specific and limited.

The case study approach enables the present research to use a variety of types of data (qualitative or quantitative) and a combination of research methods (observation, interviews, questionnaires and research tools) to answer the research question and obtain a more holistic view of the phenomena (Yin, 2014; Denscombe, 2014). The case study method offers the means to investigate complex social units consisting of multiple variables of potential importance in understanding a phenomenon. Furthermore, Erickson (1985; 2012) argues that since the general lies in the particular, what we learn in a particular case can be transferred to similar situations.

## Case study

### My approach to the case study design

To answer the research question, I adopted a case study research design. The research took place in the bounded system of one school. This Eco-School was awarded a Green Flag by the external assessor Eco-Schools. To receive the Green Flag, the school had to use environmental education in every aspect of its curriculum. The school also conducted outdoor education using the FS approach. The children of Y3 and Y4 attended the FS sessions in addition to their indoor learning sessions. Teachers took part in the research to inform the research question and test the validity of the research findings. The teaching staff validating the research findings included school specialists in environmental education and outdoor education.

The basis of my research design rests on the approach I used to combine the previous three fundamental case study methodologists, taking a critical realism approach within the mixed-methods paradigm to examine within the empirical domain (Bhaskar, 2013) how an FS can facilitate pupils' learning. By using a critical realist lens (Bhaskar, 2008), I adopted the position "that there is a physical reality which co-exists independently" of an external observer but that co-exists with social reality. While the second "reality is dependant from the social actor, the first exists independently" (Easton, 2010, p. 120). In more detail, I assume that 'the world is socially constructed but not entirely so' (Easton, 2010, p. 120), which means that in addition to the physical world, the actors' behaviour is also affected by social structures. "These structures, despite being socially constructed, are real and independent from the actors' conceptions of them. They

influence although never fully determine the ‘intentional agential activity, being nonetheless dependent on that human activity to endure or change’” (Wikgren, 2005, p. 12).

Case studies have most often been used in qualitative research methodologies (Yazan, 2015). Since case studies have not been well-defined and well-structured as protocols (Yin, 2014), emerging research that uses case studies can become confused “as to what a case study is and how it can be differentiated from other types of qualitative research” (Merriam, 1998, p. 11). For this reason, in this chapter, I discuss autonomous perspectives held by three case study methodologists who are seen as foundational methodologists in case study research, and whose suggestions impact educational researchers who use case study research design (Creswell et al., 2007): Yin, Merriam, and Stake on the use of case studies in educational research. We should also keep in mind, however, that Yin, Merriam, and Stake have different epistemological commitments that impact their perspectives on case study methodology (Yazan, 2015).

The above three authors define cases differently. For Yin, a case is a ‘contemporary phenomenon within its real-life context’ (Yin, 2014, p. 13). Yin (2014) also uses his definition of a case to advocate the usage of a case study as a legitimate research method with a ‘comprehensive research strategy’ (Yin, 2014, p. 14). From this point of view, a case study is an empirical enquiry that sheds light on a phenomenon of interest by answering ‘how’ and ‘why’ questions. Yin (2014) advises researchers to provide the rationale behind every move in the research process by backing it up with theoretical propositions and individual characteristics of the particular case they are investigating.

In contrast to Yin (2014), Stake (1995) defined a case systemically. Smith (1978) suggests that researchers should locate a case as a ‘bounded system’ and investigate it as ‘an object rather than a process’ (1978, p. 2). Also, Stake (1995) views a case study as an integrated system. As a result of viewing cases as systems, Stake’s (1995) methodological approaches could be more beneficial to study programmes and people but less beneficial to study events or processes. The above can also be partially seen in Yin (2014), who agrees that case studies are more appropriate for evaluating programmes. Another intersection between Stake (1995) and Yin (2014) is that Stake (1995) locates four characteristics of a qualitative case study. For both of the previous theoreticians, case studies ought to be holistic, empirical, interpretive and emphatic. By this, Stake (1995) suggests that researchers should take into consideration the relationship that occurs between a phenomenon and its contexts, which is similar to Yin’s (2014) definition of a case. Case studies for Stake (1995) are also empirical because researchers will make their observations in the field and base their study accordingly. Furthermore, Stake (1995) claims that

case studies are interpretive as researchers will intuitively interact with the case, within a constructivist approach, and finally, case studies are empathic as researchers unavoidably will reflect their experiences on the case from an emic perspective.

Likewise, Merriam (1998) suggests that delimitation is the defining characteristic of a case study. In line with Smith (1978) and Stake (1995), Merriam (1998) sees 'the case as a thing, a single entity, a unit around which there are boundaries' (1998, p. 27). Merriam (1998) claims that as long as researchers can 'fence in' (1998, p. 27) what they are going to inquire about, they can call it a case. Merriam (1998) seems to be adopting Miles et al.'s (1994) view on case studies, which understands 'the case as a phenomenon of some sort occurring in a bounded context' (cited in Merriam, 1998, p. 27) but adds to the qualitative case study research that the previous is intensive, holistic and analytical of a bounded phenomenon. She also adds distinctive attributes to case study research to distinguish it from the case method, case records or case works. She claims that case study research is particularistic because it focuses upon particular situations, descriptive as it provides a thick description of the inquired phenomenon, and heuristic as it enriches the reader's understanding of the phenomenon. Merriam (1998), like Yin (2014), advocates case study research as a legitimate research strategy and highlights its idiosyncratic features for future researchers to use it as an autonomous research strategy.

Yin (2014) suggests that previous attempts to use a case study approach seem to leave a 'void in social science methodology' (2014, p. 3). Therefore, Yin aims to present the design and advocates the use of case studies in social sciences as a methodology to inquire into theoretical propositions. Likewise, Merriam (1998) tries to place the case study approach in qualitative research designs and illustrate when it 'is most appropriate to use it' (1998, p. 19). Notably, even though Yin (2014) does not explicitly state his epistemological orientation on case study research designs, the way he approaches a case study relates closely to a positivistic epistemology. For example, Yin demonstrates positivistic tendencies as he carefully emphasises the notions of validity, objectivity and generalisability. Crotty (1998) acknowledges the notions of validity, objectivity and generalisability as fundamental elements of a positivistic orientation.

Furthermore, Yin (2014) suggests that researchers keep four 'yardsticks' in their minds: construct validity, internal validity, external validity, and reliability. In addition, he argues against the dichotomy of qualitative and quantitative orientations due to 'a strong and essential common ground between the two' (2014, p. 15). Yin also advocates for a pragmatic foreground that can function in the case study research designs even though he claims that he does not distinguish between quantitative and qualitative case study methods. To support the validity of the findings

of this research, the questionnaire this research used was piloted by a co-worker and the interview questions were discussed in a meeting between the researcher and two key teachers at the schools. These teachers were the eco-coordinator of the school and the FSL. The teachers were asked to examine the initial findings of the research; they were also presented with the final findings and asked to provide feedback on them.

Similarly, Stake (1995) avoids making statements about his preferred epistemology that could lead to a specific case study methodology. He does, however, devote most of his book, *The Art of Case Study Research* (1995), to the explication of a qualitative case study design and suggests that the researcher should cling to it. Stake (1995) states that 'most contemporary qualitative researchers hold that knowledge is constructed rather than discovered' (1995, p. 99). Because of that, Stake (1995) perceives researchers who use a case study design as interpreters or collectors of interpretations. For Stake (1995), constructivism and non-deterministic existentialism ought to be the epistemologies that inform a qualitative case study. Stake (1995) strongly advocates that while multiple perspectives of a case need to be represented, the very best perspective cannot be established (Stake, 1995).

Merriam's (1998) epistemological perspective appears to be closer to Stake's (1995) when compared to Yin's (2014). Merriam (1998) insists that 'reality is constructed by individuals interacting with their social worlds' (1998, p. 6), while she also defines reality as 'not an objective entity' (ibid., p. 22). Merriam (1998) suggests that what intrigues researchers is how people understand and experience the world; she therefore stands by a more qualitative approach to case study research.

My decision to use a case study design was also influenced by Baxter and Jack (2008), who claimed that this approach offers researchers the chance to explore a phenomenon within its context with the use of various data sources. Doing so allows multiple facets of the phenomenon to be revealed and understood (Baxter & Jack, 2008).

Therefore, the choice I made in the way I collected the data is also justified by previous researchers, who suggest that all social research projects become more and more reliable and validated if they use a combination of qualitative and quantitative methods. This combination is better known as triangulation or mixed methodology, with which more and more researchers agree (e.g., Anderson & Burns, 1989; Flick, 2006 in Dalton-Puffer, 2007; Gorard, 2012; 2015). These researchers believe that the data collected from two types of research can complement

each other. Hence, they suggest the combination of different methodological approaches and the collection of different data sets, to use the advantages that each has to offer.

Brody (2005) emphasises that learning in outdoor environments is a complex interplay of various factors such as individual characteristics, teachers' and students' perceptions and attitudes, social and cultural data, and quantitative aspects of the outdoor environment. This complexity underscores the need for further research in this area, particularly into how teachers and students use outdoor environments as a platform for environmental education, as a pedagogical field, and in integrating environmental programmes into the national curriculum (Comber, Nixon, & Reid, 2007). Furthermore, outdoor environments used in learning processes are critical in promoting ecological education (Orr, 2005), which aims not to assert human dominance over nature but to foster understanding and empathy towards the natural world (Swan, 1992).

*Table 3: Five misunderstandings about the case study research adapted from Flyvbjerg, 2016, p. 245*

<b>Misunderstandings</b>	<b>Flyvbjerg's Restatement</b>	<b>Positions for the Present Study</b>
1. General knowledge is more valuable than context-specific knowledge.	Universals cannot be found in the study of human affairs; context-dependent knowledge is more valuable.	Representative knowledge is less important to rich contextualisation.
2. One cannot generalise from a single case so a single case does not add to scientific development.	Formal generalisation is overvalued as a source of scientific development; the force of a single example is underestimated.	Description is more important than generalisability.
3. The case study is most useful in the first phase of a research process; it is used for generating hypotheses.	The case study is useful for both generating and testing hypotheses but is not limited to these activities.	An exploratory type of case study can be employed sufficiently where little current research is available.
4. The case study confirms the researcher's preconceived notions.	The case study is useful for both generating and testing hypotheses but is not limited to these activities.	Some tensions of bias through case studies can be avoided through validity testing.
5. Summarising case studies into general propositions and theories is difficult.	Difficulty in summarising case studies is due to the properties of the reality studied, not the research method.	Difficulty in summarising case studies is due to the properties of the reality studied, not the research method.

In an interesting discussion of the value of case study research, Flyvbjerg (2016) sets up five 'misunderstandings' about case study research, which he then dismantles, substituting a more 'accurate statement about the issue underlying each misunderstanding' (Reis, 2009, p. 1). Table 3 displays these misunderstandings and their restatements together with a summary of the position adopted for this study. The second misunderstanding, for example, 'that one cannot generalise by a single case is usually considered to be devastating to the case study as a scientific method' (Flyvbjerg, 2016, p. 224). However, citing single cases, experiments, and experiences of Galileo, Newton, Einstein, Bohr, Darwin, Marx, and Freud, Flyvbjerg makes the point that a single case can advance both human and natural sciences. He also argues that formal generalisations based on large samples are overrated in their contribution to knowledge (Reis, 2009).

For the present research, I adopt the position that representative knowledge is less important to rich contextualisation and therefore the description of what was found is more important than generalisability. Also, I believe that a case study can be employed sufficiently where little current research is available. Because of this, a case study design can support exploratory research. Additionally, some but not all tensions of bias can be avoided through validity testing. Finally, I agree with Flyvbjerg's (2016) assertion that the difficulty in summarising case studies is due to properties of reality, as this claim can also be emitted through my ontological assumptions (see p. 107).

Following the above considerations, my approach to case study research design used questionnaires, semi-structured interviews and observations, and notes from my visits to the school. The analysis was mainly qualitative by thematic categorisation of the answers given, where applicable. The semi-structured interviews were conducted with the school staff. These provided evidence for the project that enriched the contextualisation and triangulation of the study, thus minimising the potential impact of researcher bias (Armstrong, 2007).

The impact of outdoor education on the learners' participation was estimated by collecting research data from all three groups regarding qualitative axons of interest such as pupils' behaviour changes before and after the programme, their attitudes towards the learning process, joining in and teamwork, their manners towards the environment, and perseverance of any positive behavioural changes. More specifically, the research tools were questionnaires or interviews, where questionnaires might be problematic, after suggestions from the school staff to pupils and teachers in the school. Observations of lessons involved outdoor education, children's playtime and indoor education, and questionnaires were used to gather data from the parents (Appendix 8).

The data collection stage lasted for 18 months. The first seven months were spent collecting qualitative data through observations within the school grounds. The LSI was used to measure participants' involvement, when children were playing outside, when children were learning in the FS, and finally in classrooms indoors when the children were participating in the more traditional indoor learning process. During the following two months, I organised interviews with the teaching staff. These interviews were kindly facilitated on school grounds. During the last months, the questionnaire was created, and all parents of Y3 and Y4 classes were invited to take part. The biggest challenge I faced was recruiting the parents to take part in the research. To overcome this, the parents were invited to take part in the study through the school, their communication venue. In this context, the school mostly communicated with the parents through emails. Unfortunately, the participation rate was insufficient the first time. Therefore, with the help of the teachers at the school, we planned a meeting with parents where I distributed printed copies of the questionnaire to the parents, after which some parents of Y3 and Y4 who attended the meeting were recruited to take part in the research.

Parental perspectives (see page 192) are not just ancillary to educational research; they are foundational, offering deep insights that can reshape our understanding of effective learning environments. This literature review amplifies the importance of parental views, especially in exploring the inclusivity and effectiveness of FS programmes. The seminal work of scholars like Epstein (2018) has long established the critical role of parental involvement in education, illustrating how it directly influences a child's academic journey, from early development through to higher education. The connection between parental engagement and a child's success extends beyond academic achievements to include social competencies and overall well-being. Research by Fan and Chen (2001) and Jeynes (2007) consistently demonstrates that children whose parents are actively involved in their education are more likely to exhibit improved academic performance, superior social skills, and higher levels of well-being. This body of evidence underscores the multifaceted benefits of parental participation, highlighting its significance in fostering an environment conducive to learning and growth.

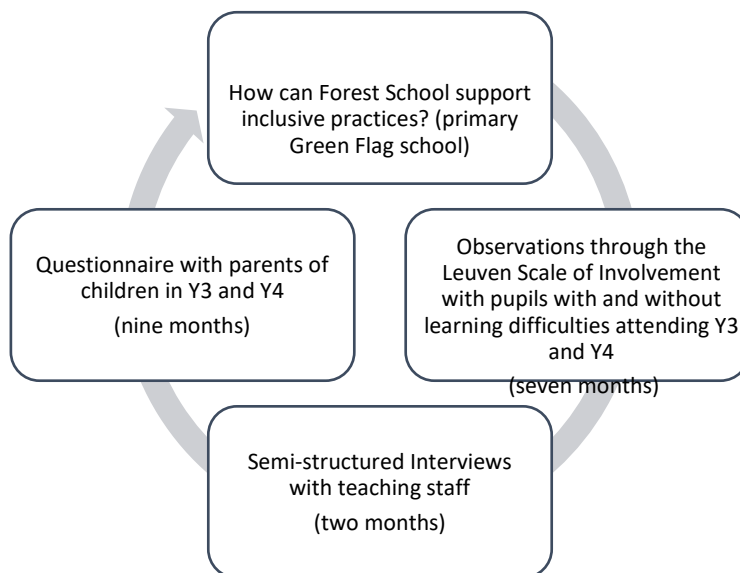
Further exploring parental perceptions, especially concerning alternative educational models like FSs, becomes critically important. Such models often challenge conventional pedagogical approaches and require a deeper understanding of parental attitudes towards education. Rickinson et al. (2004) highlighted the profound influence of parental perceptions on the adoption of innovative educational practices. These perceptions can either facilitate or hinder the integration and success of such models, emphasising the need for educational stakeholders

to engage with and understand parental viewpoints. Moreover, parents are key informants about their children's daily interactions, responses to learning environments, and the challenges they face, making their insights invaluable for a comprehensive understanding of the student experience in FSs. According to Hoover-Dempsey and Sandler (1997), this nuanced perspective provided by parents enriches the educational research landscape, offering a more complete picture of how alternative educational settings impact student learning and development.

This discussion shows that investigating parental perspectives on FSs is not only about gauging satisfaction or acceptance. It involves delving into how these educational approaches align with parental expectations for their children's education, how they perceive the development of skills and competencies outside of traditional curricular frameworks, and how such educational models might support or challenge a child's unique learning needs. By thoroughly exploring these dimensions, researchers and educators can better understand the role of FSs in the broader educational ecosystem, ensuring that these programmes meet the diverse needs of students and garner the support of their most critical allies: their parents.

Addressing concerns surrounding the perceived disconnect between parental data and other data sources, this literature review section elucidates how parental perspectives can bridge this gap. Integrating parental opinions enriches the overall understanding of inclusivity dynamics within FSs (Beveridge, 2013). In examining methodological aspects, the review emphasises the strategic use of a nine-month questionnaire to capture enduring parental perspectives.

The figure below schematically demonstrates the research design used in this research to address the research question. The current case study approach aimed to address the research question.



*Figure 4: Research tools used and data collection stage*

Figure 4 presents the research design that encompasses three distinct components aimed at comprehensively investigating the role of FS in facilitating inclusion for pupils with and without learning difficulties in Y3 and Y4. Firstly, the use of the LSI in observations is intended to gauge and quantify the levels of engagement exhibited by students during FS activities. This approach is specifically tailored to discern potential variations in the effects of FS participation across the delineated age groups, thereby offering a quantitative assessment of the inclusivity of the FS environment.

Concurrently, the incorporation of semi-structured interviews with teaching staff spanning two months delves into the perspectives and experiences of educators regarding inclusive practices at the FS. The qualitative data derived from these interviews is anticipated to yield insights into the strategies employed by teachers to foster inclusion, challenges encountered in the process, and their observations concerning the inclusiveness of the FS environment, particularly for students with learning difficulties.

Moreover, the research design involves the administration of a questionnaire to parents of children in Y3 and Y4. The intentional duration of the questionnaire is designed to capture nuanced and enduring perspectives from parents, offering valuable insights into their views on the impact of FS and environmental education on their children's learning and inclusivity. This questionnaire serves as a complementary dimension to the broader investigation into the experiences of students in a Green Flag awarded school that integrates environmental education in all aspects of its curriculum (see p. 298).

The ensuing analysis and implications of this multifaceted approach involve the synergistic integration of quantitative data derived from observations and qualitative insights garnered through interviews and questionnaires. This comprehensive strategy is designed to afford a holistic understanding of the inclusion dynamics inherent in the FS context. Triangulation of findings from the perspectives of teachers, parents, and observational data is paramount, contributing to a more robust comprehension of the overarching research question.

Key considerations in the research design include its longitudinal nature, specifically the two months allocated to interviews and the extended nine-month period for the administration of questionnaires. Additionally, the specific focus on Y3 and Y4 students underscores a targeted exploration of the impact of FS during a pivotal stage in primary education.

A recurring thought I had during my research journey was the use of observational tools to collect data from children. My first concern was that the thoughts and feelings of children can never be fully assessed (Spitzer, 2003a; Bhaskar, 2016; James & James, 2017) and that these thoughts, feelings and the implied learning that emerges from children's engagement activity could be 'inconsistent or difficult to read' (Holloway, 1997, p.176). Hence, only signs of the experience the children lived could be observed, and these signs would be individualised (Rogoff et al., 2018) and subtle (Sadoun, 2013). Furthermore, no research tool can ever fully grasp reality as any assessment given either in words or in numbers is not 'the same as meanings' (Fine & Sandstrom, 1988, p.71).

The decision to use observational data collection methods in studying children, particularly those on the autistic spectrum who may not consistently use language, draws from the foundational ideas presented by Spitzer (2003). He asserts that participant observation stands out as an essential approach for educational research aimed at deciphering the meanings behind children's activities. This perspective is supported by the comprehensive review provided by Markesich et al. (2020), which underscores the utility and relevance of observational methods in educational research, especially in natural settings where the researcher observes children engaging in their activities. Silverman (1993) also emphasises the value of observational methods in educational research, highlighting their ability to offer insights into the authentic experiences and behaviours of children in their natural environments. The inclusion of Markesich et al.'s (2020) compendium reinforces the importance of selecting appropriate data collection methods that are sensitive to the needs and capabilities of the study's participants, ensuring that research outcomes accurately reflect the lived experiences of children with disabilities.

Interpreting data from children with developmental disabilities requires understanding their unique perspectives and recognising that adults may perceive activities differently due to distinct physical, emotional, and cognitive experiences. This challenge is highlighted in research by Zubler et al. (2022), who stress the importance of evidence-informed milestones in developmental surveillance tools to accurately reflect the developmental stages of children with SEND, including those with developmental delays. Their work in paediatrics underscores the need for accurate interpretation tools that can bridge the gap between adult perceptions and children's experiences, ensuring that educational practices and assessments truly capture the children's viewpoints.

As Winkler (2009) suggests, a form of bias is the mere fact that it is problematic for adults to interpret children's experiences exclusively on their own. Therefore, to overcome this potential bias and to strengthen my research findings emerging from my interpretations of the observational data, I conducted multiple field observations to improve the quality of the observational data and maximise the possibility of truly grasping the involvement of the children in their activities both indoors and outdoors. Furthermore, to promote valid interpretations (Lawlor & Mattingly, 2001) of my thematic analysis, I invited the teachers who had spent much more time with the children at school to provide me with feedback on the initial LSI scores and discussed with them and with the Forest School leader (FSL) the results of the observational analysis.

To interpret the observational data I gathered from the children, including the children with SEND, I made two critical assumptions. I assumed that all humans have dignity and worth and that all of us act 'for the most meaningful reason possible' (Durig, 1996, p.22). In other words, I assumed the position that we do conscious things out of motivation for our actions to have an impact. Another necessary assumption was that each person's actions were meaningful. When a given behaviour was meaningful, I could then begin to understand and examine the meaning of the actions for individuals with difficulties including developmental disabilities. In this context, I analysed my data with the perception that 'behaviour is...a meaningful strategy for coping with the social environment' (Durig, 1996, p.11).

### Measuring involvement

The concept of involvement refers to a human activity and is not linked to specific types of behaviour (Laevers, 2012; Csikszentmihalyi, 1997). Csikszentmihalyi (1997) has previously spoken for the "state of flow" that surrounds a human activity using concentration as the most predominant characteristic of this flow. The LSI was developed through an 'experiential' approach to education. It is particularly designed to target a two-minute moment in a child's life and allows the educator to critically reflect on their practice. Through the LSI, the educator can reconstruct

the child's experience and shed light on a series of unsatisfactory conditions that play a key role in the learning process. The LSI pinpoints indicators for quality in the learning process that can lead to the desired outcome of the learning process. The criterion of involvement is crucial to SEND as through the LSI educators can set up challenging environments that favour concentrated and intrinsically motivated activities (Laevers, 2012).

The LSI is a five-point rating scale. Level 1 indicates no activity. At this rating, the child is mentally absent or only showing stereotypic repetition of elementary movements. Level 2 features action but with many interruptions. At Level 3, we can characterise the child's behaviour as an activity. At this level, the child is doing something (e.g., making something with clay, writing or reading). However, at Level 3, the child's activity lacks concentration, motivation and pleasure. In other words, at Level 3, the child can be seen as functioning at a routine level. At Level 4, we can see moments of intense mental activity. Finally, at Level 5, the child is totally involved in the activity, expressed by concentration and absolute implication. The LSI is a standardised observation tool with interscorer reliability of 0.90; hence, it is very satisfactory (Storli & Sandseter, 2019). To approach the reliability score mentioned in Storli and Sandseter's (2019) research, I undertook training on the use of the LSI. The training took place on video-recorded activities with children of various age groups during play and learning sessions. Furthermore, I piloted the LSI with the help of the Y4 teacher and the FSL.

The LSI can be used for all participants of an activity without an age limit. The involvement scale can be employed in childcare settings to adult learning facilities. Hence the LSI can act as a screening tool for children who need special attention (Laevers, 2012). The LSI can provide effective interventions to give positive attention and support by structuring time and space (Wood, 2017). The LSI action points AP9 and AP10 in particular can be used in SEND settings. The AP9 ('identify children with emotional problems and work out sustaining interventions') works around children with behavioural and emotional problems. The LSI AP10 ('identify children with developmental needs and work out interventions that engender involvement within the problem area') draws attention to children with special developmental needs who fail to take part in activities in one or more areas of competence (Laevers, 2012).

### Critique of LSI concerning children with SEND

While the LSI is a commonly used tool for measuring children's engagement in learning activities, its suitability for use with children with SEND has been questioned. One potential issue is that the LSI is based on a normative sample of children, meaning that it may not accurately capture the engagement of children with different needs or abilities. Additionally, the LSI primarily

focuses on observable behaviours, which may not fully capture the cognitive and affective aspects of engagement for children with SEND, who may exhibit engagement in different ways. Furthermore, the LSI does not consider contextual factors that may affect engagement, such as the physical environment or social interactions, which can be particularly relevant for children with SEND.

Research tools such as the EPS have been developed specifically for use with children with SEND and consider the unique needs and abilities of this population. The EPS considers engagement more holistically, considering cognitive, affective, and contextual factors. The EPS has been recommended in the Rochford Review (2016) as an appropriate tool for assessing engagement for children with SEND.

### Rationalisation of the use of LSI instead of the EPS for the present thesis

While the EPS may be more suitable for measuring engagement for children with SEND, the decision to use the LSI in the present thesis was based on several factors. First, the LSI is a widely used tool for measuring engagement, and as such, provides a means of comparison with other studies. Second, the LSI was previously used by the schools participating in the study, which allowed consistency in data collection across all settings. Third, the LSI is a relatively simple and easy-to-administer tool, which was important given the time and resource constraints of the study.

While the LSI may have limitations in terms of its suitability for measuring engagement for children with SEND, steps were taken to ensure that the tool was used appropriately for this population. This included the use of additional observation notes to capture aspects of engagement that may not be fully captured by the LSI, and the triangulation of data with other sources such as teacher observations and interviews.

Involvement is increasingly recognised as a key measure of educational quality, with tools like the LSI being used to assess and enhance teaching strategies by evaluating student engagement (Wood, 2017; MacRae and Jones, 2020). This scale suggests that a child's engagement level directly influences the depth of their learning experience and complexity of thought. Extending this concept, Stavrianos and Pratt-Adams (2023) advocate for education that prioritises inclusive and holistic learning outcomes over mere skill acquisition. Their research underscores the importance of fostering deep, meaningful engagement in students to achieve a broader educational impact. However, Lee (2019) and Hunkin (2018) both warn that when diagnostic tools are used to theoretically underpin technocratic tools of measurement concerning a neo-liberal approach regarding progress and outcomes, they run the danger of subsuming children, especially those who are being perceived as disadvantaged, in a way where these

diagnostic tools accentuate a surveillance regime over children. Perhaps the biggest advantage when considering the use of the LSI to measure involvement as a quality in learning is that it opens potential in educational research to resist cultures of testing that are 'creeping into the policies and practices' (MacRae and Jones, 2020, p.2) of educational settings and are in danger of leaking into educational practices an incremental culture of 'readiness' that often targets disadvantaged children (Lee, 2019; Bates, 2019).

The LSI offers alternatives to outcome-based visions of education and has been previously used in educational research in the UK to promote learning and measure involvement (MacRae, 2019; Robert et al., 2020; Mathers et al. 2007). By using the LSI, educational staff can measure progress (Robert-Holems, 2015) and quality (Mathers et al., 2007) in terms of outcomes in regulatory frameworks. Moreover, Leavers argues in favour of another advantage of the LSI. He suggests that for the adult to measure a child's involvement in an activity, the adult must attune the two-minute window with what Leavers (2012, p.5) calls 'empathic understanding'. In other words, the adult must tune in to the child's experience and remember what it is like to be a child. MacRae and Jones (2020) add to Leavers' (2012) notion of empathic understanding by suggesting that through the notion of involvement, the LSI can help us engage with the notion of becoming a child.

In 2011, the Complex and Learning Difficulties and Disabilities Research Project (CLDD) developed a research tool to assess student engagement levels called the EPS. The EPS consists of two parts: the Engagement Profile (EP) and the Engagement Scale (ES). The EP, used by all staff and families working with a child, captures the way a child behaves when they are engaged and is divided into seven indicators: awareness/responsiveness, initiation, curiosity, investigation, discovery, perseverance, and anticipation. Observers use the ES as a tool to record and measure changes in a student's engagement levels. It allows the monitoring of personalised adaptations made to activities to strengthen personalised learning. (Carpenter et al., 2015).

The use of appropriate tools and instruments for assessing children's engagement in outdoor activities is crucial for accurately capturing the extent and quality of their involvement. The LSI and the EPS are among the commonly used instruments for measuring children's engagement in outdoor learning activities. While both LSI and EPS are effective in measuring engagement, the choice of instrument may depend on the specific research context and population being studied. For instance, the LSI has been widely used in studies of outdoor learning with typically developing children (Sobel, 2014; Wattoo & Brown, 2011), while the EPS was developed and validated specifically for use with children with SEND.

The choice of instrument for measuring children's engagement in outdoor learning activities should be based on the specific research context and the population being studied. While the LSI may be appropriate for use with typically developing children, the EPS may be more suitable for assessing the engagement of children with SEND. However, the use of a common tool for measuring engagement across all children may be necessary for consistency and comparability.

In the current study, the LSI was chosen over the EPS for measuring engagement due to the population of children involved, who were a mixed group of typically developing children and those with SEND. While the EPS may have been a more appropriate tool for assessing the engagement of the children with SEND, using a common tool was deemed necessary for measuring engagement across all children in the study for consistency and comparability.

The present research acknowledges that no research tool can capture the full image of reality; however, several tools have been developed to capture to some extent levels of student involvement and to record and measure changes of student involvement. The present research used the LSI to capture involvement scores through two-minute observations of children with and without learning difficulties in a mainstream school. This choice was also influenced by the fact that the research intent was to measure student involvement in educational settings as they were. Furthermore, the LSI can be used for all children, with and without learning difficulties and disabilities (Laevers, 2012). Finally, the LSI could be used by an independent researcher outside of the children's lives and could be used by one researcher.

## Sample

The sample was convenient since a school within easy reach was selected and purposive since the school had to follow certain criteria (Johnson et al., 2012). This is because I needed to be able to easily visit the school regularly. The school helped me to recruit participants and it was very close to Anglia Ruskin University. The school was also selected based on several criteria.

The criteria used were that the school had to be an Eco-School. The school also needed to have been awarded a Green Flag and to have a FS. Eco-Schools is an international award programme that aims to guide schools on their journey for sustainability. The Green Flag award is not self-assessed, and for the school to be eligible for the award, it must comply with the specific criteria (Appendix 11). In more detail, the sample consisted of pupils, teachers and parents of a specific primary school in the east of England (Cohen, Manion & Morrison, 2011).

The research focused on Y3 and Y4 at one primary school. The participants were 19 adults (five teachers and 14 parents) and ten children (pupils aged 8-10 years). The research used a different research tool to collect data from each group of participants who participated in the research: semi-structured interviews to collect data from the teachers, questionnaires to collect data from the parents, and the LSI to collect data from the children.

Two of the children have learning difficulties and require special educational treatment. The sample was of mixed gender. In more detail, five children were recruited from Y3, two girls and three boys. One of the boys in Y3 was facing general difficulties and had a statement for social communication disorder. Also, five children were recruited from Y4, three boys and two girls. One of the girls in Y4 was facing general difficulties and had a statement for global developmental delay. The research adopted the LSI to collect empirical data regarding the involvement of the children in three different settings.

Even though the initial research plan was designed to include 62 parents in the research, only 14 parents were recruited. The parents had children attending either Y3 or Y4. These parents completed a semi-structured questionnaire to answer questions regarding their opinions about environmental education and outdoor education and their effect on their children.

In addition, five teachers participated in the study and provided their opinions regarding outdoor education and the environmental education that was conducted in their school. These teachers were the reception teacher, the FSL, the Y3 teacher, the Y4 teacher, and the substitute Y4 teacher.

### Research involving children

Research involving children conducted in the twentieth century was mainly in the field of developmental psychology (Hogan, 2005). Educational research in the twentieth century was often conducted through a positivist framework that assumed an independent and objective reality could be measured. Hence during the 1940s and the 1950s, children in educational research were often seen as research objects (Hogan, 2005; Griffin & Lahman, 2016). As 'there is not one best approach that suits all children or all contexts' one should 'adopt approaches that are contextually relevant and make sense to the children involved' (Dockett & Perry, 2005, p.517). Dewey (1902) promoted the idea that research involving children should occur in children's natural settings. In the same vein, Vygotsky (1978) and Bronfenbrenner (1970; 1979) suggest observational methods for educational research to be conducted in children's natural environments. According to Bronfenbrenner, "the present developmental psychology to a large

extent seems to be the science of strange behavior of children in strange situations with strange adults, analysed within time periods as short as possible” (Bronfenbrenner, 1979, p. 33).

The 1980s saw a shift in the previous way of thinking regarding research involving children from an adult perspective of childhood to the reconstruction of experiences from the child’s perspective. Griffin and Lahman (2016) suggest that this shift occurred primarily due to popular acceptance of the United Nations Convention on the Rights of the Child in 1989. The Rights of the Child Convention also had an impact on educational researchers who introduced the idea of children as a distinct social group (Corsaro, 1997). The current view in educational research is that the participants are not seen as passive objects to an all-knowing researcher and that the research happens for the children instead of just with the children (Griffin & Lahman, 2016).

Bradbury-Jones et al. (2018) suggest that marginalisation and exclusion are often the motivations for a researcher to engage in research with vulnerable children, such as children with SEND. Bradbury-Jones et al. (2018) claim that vulnerable children face implemented difficulties in accessing opportunities and resources that are available to their peers. Hence, working with vulnerable children and treating them equally to their peers promotes their meaningful involvement in the research (Krakouer et al., 2017). However, a remaining concern regards the involvement of children with disabilities (Chappell et al., 2014) or children with learning difficulties (Stevenson, 2014) in research. Aldridge suggests that researchers who involve vulnerable children in their research adopt appropriate methodologies to allow such children to participate in the research. One could argue in favour of the use of participatory research in educational settings as an option to empower vulnerable students. However, the notion of empowerment and its relationship to research is problematic as

*‘Power is not exercised simply as an obligation or a prohibition on those who do not have it’; it invests them, is transmitted by them and through them; it exerts pressure upon them, just as they themselves, in their struggle against it, resist the grip it has on them (Foucault, 1995, p. 27).*

Wickeden and Kembhavi-Tam (2014) raise the issue of a silenced voice among children who face difficulties in their lives and claim that parents or professionals who work with children frequently act as a proxy for the children by answering for them. Hence they do not recognise that children can express their views. Wickeden and Kembhavi-Tam (2014) also note the need for an accessible establishment; they argue in favour of inclusive research and advocate for inclusivity in research rather than a ‘special’ approach. Wickeden and Kembhavi-Tam (2014, p.414) state, *‘Rhetoric about the inclusion of disabled children in research is likely to be at best tokenistic and*

*at worst ethically untenable as it may exacerbate their excluded position*'. Bradbury-Jones et al. (2018) also suggest that research that involves children with SEND must not replicate vulnerabilities that these children experience in any areas of their lives.

## Context

The study took place in a mainstream primary school in a city in the East of England. The school the research focused on was selected because it had been awarded a Green Flag. Approximately 235 children aged 4-11 years attend the school and most live nearby. However, only two classes were focused on: Y3 and Y4, from which ten pupils were selected to take part. The full-time staff of the school consists of eight class teachers, plus the head teacher, the deputy head teacher, and five teaching assistants.

Constructed in the 1980s, the educational institution is comprised of multiple rooms, including eight classrooms, an information and communication technology room, the school hall, a resources room, a food technology room, a music room, a library area, offices, a staff room, and a community room. The premises have been designed to cater to the needs of pupils with kinetic challenges, and wheelchair-accessible entrances are provided. The classrooms have been arranged in two wings, one for each Key Stage, and are interlinked by the library, thereby offering students ample learning space. Additionally, the school premises are located close to a verdant setting, providing nearly two acres of land replete with a wildlife area, extensive playing fields, and an all-weather pitch suitable for sports activities. To facilitate learning in both indoor and outdoor settings, the school provides students with a sand pit and a separate, equipped playground that caters to the needs of the youngest children. Y3 and Y4 students attended FS sessions, with a consistent FSL conducting four sessions per academic year. The school's FS is situated within the school grounds, next to the playground in the woods, and is enclosed by a fence.

Y3LDB was diagnosed with Asperger's syndrome (AS). AS is a neurodevelopmental disorder in the autism spectrum disorder (ASD) and is diagnosed in males more often than females (Ferri, 2014; Lai and Baron-Cohen, 2015). With the release of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), AS was removed as a separate ASD diagnosis and is currently included under the ASD umbrella. However, AS remains within the International Classification of Diseases (ICD-11) published in 2019 as an ASD subtype (ICD-11, 2019).

The student was considered by the staff as a high-functioning student who was facing social and mainly behavioural difficulties. He would often self-isolate from others during playtime.

The student had an artistic interest in crafts, which he produced both indoors and in the outdoor learning sessions. The child would sometimes speak loudly to support staff or with his fellow students during indoor classes. When he was asked to write a story in an indoor learning session, the student would interrupt the activity several times to talk with his writing partner. Even though he would often struggle to finish his projects, he was persistent in his efforts.

Y4LDG was diagnosed with global developmental delay. Y4LDG was facing several difficulties in all three settings. The child was facing speech and language delays and often found it difficult to mix with her peers during play. Y4LDG often appeared to have limited communication skills and difficulties in her social and emotional understanding. During the lessons indoors the child faced difficulties with her reading and had difficulties maintaining concentration. The child was facing several difficulties in her learning but was also struggling with her social and emotional development. Often she did not respond to social interactions and was characterised by members of the staff as a low-ability student in terms of academic development. During the indoor learning sessions, the student often found it difficult to engage in an activity that required conversational skills. She seemed, however, very happy to participate in classes that involved IT. She also appeared to be engaged during the FS sessions. During her indoor classes, she often lost interest when she had to engage in an activity or a craft and refused to start it.

During playtime, the children did not have a structured activity plan. However, the children were free to use some facilities in the schoolyard. These included a merry-go-round, a swing set and several sitting spaces such as benches. Neither of the children with SEND engaged with either the go-round or the swing playground facilities during the observations in the playground. Often Y4LDG would sit on a bench and sporadically talk with her friends. Frequently Y3LDB would run around nervously during play, moving away from others. During the indoor sessions, the children engaged in various numeracy, reading and writing learning activities. The children were asked to identify geometrical shapes and learn their properties. The activities also included calculations in mathematics, reading and writing stories and projects such as producing posters and booklets. The indoor learning sessions in Y4 also included an environmental project that lasted for several weeks, regarding the cycle of water, overconsumption and recycling. In many learning activities, both in the indoor sessions and during the FS sessions, the children had the opportunity to work in small groups and individually. During the FS sessions, the children engaged in numerous activities that involved building huts to find shelter, crafting kites and clay animal tokens and experimenting with woodland materials. In most activities, the children with SEND

were engaged. Y3LDB was very excited to explore the nearby woodlands to collect materials with his group to build their hut.

Even though the study included only two participants with SEND, their experiences were still valuable and contributed to the findings and implications of the study. The experiences of these two participants, along with those of their peers and teachers, provided a rich picture of how FS supports inclusive practices.

The head of the school planned a meeting with the researcher to meet the school staff on the school grounds. The staff was briefed during the initial meeting on the aims of the present research and participants from the teaching staff were recruited to take part in individual interviews. The teachers then received a participant information sheet to read and a participant consent form to sign. The Y3 and Y4 teachers also received copies of the parents-for-children participant information sheet and consent forms to pass on to the parents whose children were taking part in the research. The Y4 teacher gave me the signed consent forms in the school during the following days, and the observations of the children who were taking part in the research started. The parents were initially invited to take part in the study through a mass email sent to them by the school. As the initial response rate was low, a second email was sent re-inviting them to take part in the research. I attended a parents and teachers day in the school to recruit parents of Y3 and Y4 for the research. The parents received printed copies of the questionnaire, and eight of them filled out the printed copy of the questionnaire on school grounds. Six of the parents used their phones to fill in the online survey.

The starting points, interests, and learning priorities of each child were considered when planning the activities and observations. For example, Y3LDB had a keen interest in the natural world. Y4LDG had difficulty with fine motor skills but was enthusiastic about participating in physical activities. These interests and learning priorities were incorporated into the planning of the activities, ensuring that they were engaging and meaningful for each child.

The activities available in the classes, at playtime, and in the FS contexts were carefully selected to appeal to all children, including those with SEND. In particular, activities that allowed for sensory exploration, physical movement, and creativity were emphasised. For example, during playtime, children were encouraged to engage in imaginative play using natural materials such as sticks and leaves. The classroom provided opportunities for messy play, sensory exploration, and group activities that encouraged social interaction and collaboration.

In the FS context, a variety of activities were available, including building dens, lighting fires, and exploring the natural environment. These activities were designed to be accessible to all children, regardless of their abilities. For example, children who had difficulty with physical tasks could participate in less strenuous activities, such as collecting leaves or examining insects. Additionally, the FS context provided a unique opportunity for children to engage in unstructured play and exploration, which is important for their development and well-being.

The rationale behind including these three settings in the observations is rooted in the belief that a holistic approach to learning is essential for all children, particularly those with SEND. By observing children in different settings, we can gain a more comprehensive understanding of their needs, interests, and learning styles. Additionally, by observing the same children in multiple settings, we can gain insights into how they transfer skills and knowledge between contexts.

Furthermore, the inclusion of the FS context is particularly important, as it offers a unique opportunity for children to engage with the natural environment and develop skills that may not be as readily accessible in other settings. Research has shown that outdoor learning experiences can have a positive impact on children's well-being, physical health, and cognitive development (Coates & Pimlott-Wilson, 2019). Additionally, outdoor learning experiences can promote a sense of belonging and connection to the natural world, which is important for the development of a sustainable and environmentally conscious society.

### Data collection timeline and gatekeeper access

The data collection stage started in November 2013 and was initially scheduled to last until April 2014. However, due to two major challenges, this stage of the research lasted until April 2015 (see Figure 3). These challenges were that my key contact in the school (Y4 teacher) went on maternity leave in February 2014 and participant recruitment for the survey. The first initially limited my access to the school. However, I contacted the deputy headteacher, who also substituted for the previous Y4 teacher and interviewed her as well. Initially, the school staff suggested that we should mass email the parents of Y3 and Y4, inviting them to take part in the online survey. However, at that stage, the response rate was low (10%) and subsequently, I printed hard copies of the survey and visited the school on two parent days to physically recruit more parents and elaborate on this aspect of the research to them. In total, I managed to recruit eight more parents to fill in the questionnaire.

The pilot study took place in September 2013. During the pilot, the context was identified and the potential sample was discussed. The observations using the LSI took place from

November 2013 to April 2014, when the last FS session for that school year occurred. The interviews with the teaching staff took place during the same period. The questionnaire was filled in gradually from March 2014 to April 2015, when the anticipated number of parents, as suggested by Denscombe (2014) and Saunders (2005), had filled it in.

## Data collection instruments

### Semi-structured interviews

Interviews and questionnaires are often used in educational research (Gall and Gall, 1996). Educational research can be either participatory, within the scope of qualitative research, or systematic, which follows methods of quantitative research. Wood (1991) describes interviews as ‘the only way to approach human perceptions’ (1991, p. 62) but at the same time as a tool that can give flow to data. Notably, this data flow is greater in semi-structured interviews with a higher degree of flexibility.

The interview is one of the basic tools of qualitative research (Paraskevopoulou-Kollia, 2008) and is defined as the one tool that promotes communication between people who interact to extract information related to the subject of research (Cohen & Manion, 1984; Papaioannou & Theodorakis Goudas, 1999). This research tool consists of verbal communication between two people, the interviewer and the interviewee. This communication in the context of this study was conducted so that the interviewer could obtain the opinions and attitudes of the respondent on an issue and required detailed organisation. An interview, as a research tool, is the interaction, the communication between individuals, led by the researcher or interviewer to extract information related to the subject of the investigation. The conversation that takes place between two persons constitutes the core of the tool (Paraskevopoulou-Kollia, 2008).

Due to the small number of educational personnel in the classes that were examined, and keeping in mind that interviews can be used to collect more in-depth insights on participant attitudes, thoughts, and actions (Kendall, 2008), semi-structured interviews were used as the primary research tool to collect data from the teachers and school staff. The research behind this approach was justified because this research tool ‘sees the centrality of human interaction for knowledge production, and emphasises the social situatedness of research data’ (Cohen, Manion & Morisson, 2002, p. 267).

In general, an interview can highlight i) knowledge and information, ii) values and stances, and most importantly, iii) the opinions and perceptions held by the subject (Vamvoukas, 2007; Paraskevopoulou-Kollia, 2008). Importantly, what distinguishes an interview from a conventional

'chat' is the existence of a predetermined objective and a systematic effort to attain it (Vamvoukas, 2007, Manolitsis, 2016).

Depending on the degree of standardisation in an interview, we can schematically distinguish three main types: 1) structured interviews, 2) semi-structured interviews and 3) unstructured or free interviews (Papaioannou, Theodorakis & Goudas, 1999; Iosifides, 2016). Structured and semi-structured interviews are standardised, while unstructured interviews belong to the category of non-standardised interviews (Papaioannou, Theodorakis & Goudas, 1999). The interview significantly differs from a dialogue between the interviewer-researcher and the subject(s). The researcher must be able to develop a good communication level with the subject (Paraskevopoulou-Kolia, 2008).

a. The structured interview: The interviewer asks a series of strictly predetermined questions to focus on specific issues in the answers. It includes closed-ended questions that ask the interviewee to respond to stereotypes YES or NO or DO NOT KNOW.

b. The semi-structured interview: This more flexible form of structured interview allows deepening in various subjects, and the researcher can change or clarify questions. Also, the semi-structured interview includes closed-type questions (similar to structured), but here, the researcher can submit follow-up questions for a deeper understanding of the response given by the respondent.

c. The free or unstructured interview: This form has no predetermined questions, and the researcher intervenes as little as possible. The conversation progresses freely, although always within the context of the main topic, while the researcher maintains maximum flexibility. The unstructured interview is undoubtedly the most convenient way for preliminary detection of field research and the formulation of research affairs. It is frequently used when the sample size is small and with heterogeneous characteristics (Vamvoukas, 2007).

Non-standardised interviews help more when sensitive topics are being investigated (such as antisocial behaviour, violence or drugs). They give the participant the feeling that they are participating in a talk in which the researcher has specific issues they want to learn about or validate (Papaioannou & Theodorakis Goudas, 1999). Paraskevopoulos (1993) contributes a few more types of interviews: structured, unstructured, direct or indirect, recurring and depth.

According to Kyriazi (2011), the in-depth interview concerns a series of general questions on topics that the researcher has issued but not put in a specific order. The researcher in this context acts as an auxiliary and subtly guide (Kyriazi, 2011). In all types of interviews, the researcher must consider the impact of his behaviour; his behaviour could disorientate him from the answers the subjects are giving (Antaki & Rapley, 1996). The transcription of data right after the interview takes place has been recognised as one of the ways to control bias and reliable production data analysis (Saunders, Lewis & Thornhill, 2000). For this reason, the transcriptions occurred daily, immediately after the interviews.

The two basic methods of recording data during the interview are by technical means (voice/tape recorder) and with notes. Of course, a combined method can be applied and will be more comprehensive. Permission to record the interview should be sought from the respondent (Liazos, 1972). For this research, the participants were given a consent form to sign and a participant information sheet to read before being invited to the interview. The researcher also highlighted that the interviews would be recorded with a voice recorder, as a common problem internationally, in many educational research using interviews as a research tool, relates to the use of voice/tape recorders. In many educational types of research (Freiderikou & Folerou, 1991; Nias, 1991), the researchers underline educators' hesitation to give interviews that are being recorded, especially when these interviews research topics that concern their class directly, their work, or their role. This hesitation is often caused by many educators's unfamiliarity with research procedures and the use of an interview as an assessment tool. To bypass this barrier, the participant information sheet included detailed information on how the data would be treated and the teachers were given reassurances of anonymity when the findings were discussed.

As a response to the above concern, I also described the research tools and the methods used before the interviews started, and, in addition to the participant information sheet, which contained vital information regarding ethical concerns, I adopted the recommendation of Manolitsis (2016), who suggests that the researchers try to create a comfortable atmosphere so that the interview will have the form of a pleasant conversation. In particular, the preparation for the interviews included considerations for the interviewer's external appearance, the promotion of confidence towards the interviewee, and the duration of the interview, so that the subject understood the questions asked and had enough time to answer them. For this reason, all interviews were timed and none exceeded 20 minutes. I also tried to not react either positively or negatively to what the subject was saying to limit any influence I might have on the answers given.

## The Leuven Scale of Involvement

Since the topic is relatively unexplored, the nature of the research question and the necessity of understanding outdoor education in its natural environment, semi-structured, non-participant observations were used as the primary research tool to collect information on the involvement of pupils participating in the FS sessions. Well-being directly links to self-confidence, self-esteem and resilience, while involvement refers to being intensely engaged in activities and is a vital condition for deep-level learning. Well-being was described as being a 'fish in the water' and was generally indicated by openness and receptivity, flexibility, self-confidence and self-esteem, assertiveness, vitality, relaxation, inner peace, and 'enjoyment without restraint' (Waller, 2013, p. 25). In general, well-being is being in touch with oneself. Involvement can include concentration, complexity and creativity, persistence, reaction time, satisfaction, energy, facial expression, composure, precision and verbal expressions (Waller, 2013)

The observations for this study (see Appendix 9) were conducted using the LSI (Laevers, 2011), a scale developed as a measure of 'deep learning' and of the effectiveness of the learning environment through a five-point system based on the involvement and well-being of pupils.

Laevers (2011) argues that we can gain insight into how children are doing by considering the linked dimensions of 'well-being' and 'involvement' that children display when engaged in an activity. He claims that:

when we want to know how each of the children is doing in a setting, we first have to explore the degree to which children feel at ease, act spontaneously, and show vitality and self-confidence. All this indicates that their emotional well-being is 'OK' and that their physical needs, the need for tenderness and affection, the need for safety and clarity, the need for social recognition, the need to feel competent and the need for meaning and moral value in life, are satisfied... The concept of involvement refers to the dimension of human activity. Involvement is linked neither to specific types of behaviour nor to specific levels of development' (Laevers, 2011, p. 24).

Laevers contends that adult observation of children's activities can allow an evaluation of the degree to which a child is involved in an activity, and this provides insight into their well-being and involvement. Involvement in this context is evident when the pupils show signs of concentration and focus when they operate at the very limits of their capabilities (see Appendix 9 for an example of the observational tool). In this 1-to-5 scale, "at level 1 there is no activity. At level 5 there is total concentration" (Laevers, 2011, p. 25). The Child Involvement Scale also drew

from Pascal et al. (1997). Anning and Edwards (2006) suggest that the Child Involvement Scale is a self-evaluating tool that can be used for the improvement of settings via the Effective Early Learning (EEL) Programme. The LSI has been characterised to assist with EYFS summative assessments and learning and development of key characteristics of effective learning (Kenny, 2010).

The evaluation starts with assessing the levels of involvement using the LSI. The procedure is simple and can be compared to 'screening': I observed the children individually for about two minutes and then gave them a score for involvement using the five-point scale. Unless children are operating at levels 4 or 5, learning will be limited (Laevers, 2011). To become familiar with the tool, the Research Supervisor organised a training tutorial and included a standardisation procedure through the usage of video material of children during learning sessions.

Observations and scale assessments were carried out in the class and during children's free time while playing outside, to assess any differences in levels of involvement between school and during the FS sessions.

Inclusive practices are critical in educational settings as they permit all students to learn and grow in an environment that respects diversity and promotes equity. However, defining and measuring inclusiveness can be a complex and multifaceted task, as it encompasses various dimensions such as access, participation, and engagement. In the context of the present study, inclusive practices were operationalised through child engagement scores, which were used as the sole measure of inclusiveness. This section aims to provide a clear rationale for this choice, discuss the limitations of using engagement scores as the sole measure of inclusiveness, and explore how engagement aligns with the broader concept of inclusiveness in the literature on inclusive education.

### Defining and operationalising Inclusivity and inclusive practices in the study

Inclusive practice and inclusivity, while closely related and often used interchangeably in casual discourse, are not identical concepts. Their distinction is important in educational and social contexts to understand the depth and breadth of efforts required to achieve a truly inclusive environment. Inclusivity is a broad goal or principle that emphasises the importance of creating environments, whether educational, workplace, or community, that are welcoming and accessible to all individuals regardless of their abilities, backgrounds, or characteristics. This overarching ethos seeks to ensure that everyone feels valued, respected, and supported. Inclusivity involves

recognising diversity as a strength and actively working to eliminate barriers to full participation and equity.

Inclusive practice, on the other hand, refers to the specific methods, strategies, and actions implemented to achieve the goal of inclusivity. These practices are the tangible steps taken to ensure that inclusivity is not just a theoretical concept but is realised in everyday actions and interactions. Inclusive practices might include designing a curriculum that reflects the diversity of students, employing teaching methods that accommodate various learning styles and abilities, or modifying physical spaces to ensure they are accessible to everyone.

In the context of the present thesis, inclusivity is defined as the commitment to ensuring that every child, regardless of their unique needs, abilities, or backgrounds, is allowed to fully participate in, engage with, and benefit from the educational experiences provided. It is a principle that underlines the creation of a learning environment where diversity is not only recognised but celebrated as a valuable asset, fostering a sense of belonging among all participants.

Inclusive practices, on the other hand, are the tangible strategies and actions implemented to actualise the ethos of inclusivity within the educational setting. These practices are the methodologies through which inclusivity is brought to life, encompassing adaptive learning environments, differentiated instruction, promotion of positive social interactions, empowerment of children's voices, and a commitment to reflective practice. Inclusivity serves as the overarching goal of creating an environment where every child feels valued and included, while inclusive practices are the means through which this goal is achieved. Thus, while they are interconnected, inclusivity and inclusive practices are not identical concepts; the former is the broad aim of an inclusive education system, and the latter are the specific methods used to reach this aim.

The use of the LSI in this study aligns perfectly with our core principles of inclusivity. The LSI offers a holistic assessment of children's involvement in learning activities, focusing on their levels of engagement, concentration, and the vitality they exhibit in their educational encounters. This tool is instrumental in supporting experiential learning and is inherently compatible with a child-centred approach as it values the unique ways children engage with their learning environments. By measuring involvement, the LSI provides insights into how well the educational setting meets the diverse needs of its learners, thereby serving as a critical indicator of the effectiveness of inclusive practices.

In operationalising and measuring inclusive practices within this study, the LSI plays a pivotal role. It enables us to empirically examine the extent to which the FS environment fosters

high levels of child engagement: a direct outcome of effective inclusive practices. Through the LSI lens, we can assess the immediate impact of these practices on children's learning experiences, providing a concrete measure of inclusivity in action. This rationale underscores the precision with which inclusive practices are defined, justified, and evaluated in the study, addressing the concern for a detailed understanding of how inclusivity and inclusive practices are conceptualised and implemented within the FS setting.

### Child engagement score to measure inclusiveness

The rationale for using child engagement scores as the sole measure of inclusiveness lies in the unique context of FS, which emphasises child-led learning and outdoor exploration. FS pedagogy is founded on the belief that children's engagement with the natural world is essential for their learning and development. Therefore, measuring inclusiveness through child engagement scores aligns with the core principles of FS and the belief that children's engagement in outdoor learning environments is vital to their learning and development.

Moreover, engagement is a critical component of inclusive education as it reflects the degree to which students are involved in and motivated by learning activities. The literature on inclusive education suggests that inclusive practices involve creating learning environments that are responsive to students' diverse needs and interests and that foster a sense of belonging and participation for all students (UNESCO, 2021). Therefore, measuring inclusiveness through engagement scores aligns with the broader concept of inclusiveness in the literature on inclusive education as it reflects the degree to which children feel connected to their learning environment and are motivated to participate in learning activities (Docket et al., 2014).

However, using engagement scores as the sole measure of inclusiveness has limitations. First, engagement scores may not capture the full range of diversity among children, particularly those with disabilities or learning differences. For example, some children may not engage in the same way as their peers due to physical or sensory differences but may still benefit from participation in FS. Second, engagement scores may be influenced by factors such as the quality of the learning environment, the teaching methods used, and the interests and motivations of the children themselves. Therefore, engagement scores must be interpreted within the broader context of inclusive education, recognising that engagement is just one aspect of inclusiveness.

To address these limitations, a multidimensional approach to measuring inclusiveness that considers multiple factors, such as access, participation, and engagement is necessary. For example, the literature on inclusive education suggests that inclusive practices involve creating

learning environments that are responsive to students' diverse needs and interests and that foster a sense of belonging and participation for all students (Avramidis & Norwich, 2002; UNESCO, 2021; Hartmeyer, 2018). Therefore, incorporating measures of access and participation, such as attendance records or surveys of students' perceptions of their learning environment, can provide a more comprehensive picture of inclusiveness in the context of FS.

In conclusion, using child engagement scores as the sole measure of inclusiveness aligns with the core principles of FS and reflects the importance of engagement in inclusive education. However, engagement scores should be interpreted within the broader context of inclusiveness and recognised as just one aspect of a multidimensional approach to measuring inclusiveness. Future research should consider incorporating measures of access and participation to provide a more comprehensive picture of inclusiveness in the context of FS, particularly for children with disabilities or learning differences.

### Google Documents survey

Because of the number of parents who have children in Y3 and Y4, it was more efficient to explore their stances and opinions regarding outdoor education, environmental education and the FS programme of the school and reflect upon the school's Green Flag status through questionnaires. These questionnaires were given to parents via an electronic platform called Google Documents (GDocs). To be more specific, parents were invited to participate in the research because they were stakeholders and their views and stances could influence how their children reacted to the learning process. The email inviting the parents to fill in the survey contained a cover letter stating the research aims and purpose while underpinning the theoretical background and a participant information sheet (Appendix 4).

A questionnaire is a form containing a series of questions related to a problem, which the respondent is asked to respond to in writing. Its questions are designed to gather the necessary research data (Paraskevopoulos, 1993). It is an easy-to-use data collection tool that can be distributed and filled in without the researcher's physical presence and is relatively intelligible and easy to analyse (Wilson & McLean, 1994, in Cohen, Manion & Morrison, 2011).

Verma and Mallick (2004) argue that the questionnaire must have an introduction for respondents stating :

- who will conduct the research
- what the research seeks to achieve
- the benefits that will result from this

The researcher should design the terminology used to convince subjects to cooperate with him (Vamvoukas, 2007). The respondents' cooperation was crucial for the success of the investigation and for this reason, the researcher thanked them in advance (Verma & Mallick, 2004). Finally, the questionnaire included assurances of confidentiality, anonymity and non-traceability, that data would be aggregated and that the subjects could not be identified through their responses (Cohen, Manion & Morrison, 2007). To comply with this, the research obtained ethical approval and the designed questionnaire followed BERA guidelines (Appendix 6 and 7).

The type, the syntax, and the words used to formulate the questions, the scales, and the overall appearance of the questionnaire can exercise a decisive influence on the answers given and can affect the results of the investigation. It thus became apparent that the construction of the questionnaire was not an easy task (Vamvoukas, 2007; Bell, 1997). The first step in constructing the questionnaire was the review of the objectives of the study and the intended mission of the research (Verma & Mallick, 2004).

The questions included in research questionnaires often differ in the degree of freedom that allows the examinees to formulate their responses and are mainly of two types: open and closed questions (Paraskevopoulos, 1993). Open questions enable respondents to answer freely, express their opinions, justify their answers and avoid the limitations of predefined responses that characterise closed questions. These types of questions can contain the so-called 'diamonds' of information that otherwise cannot be identified in the questionnaire (Cohen, Manion & Morrison, 2007). Open questions should be used more in the preliminary stages of an investigation because they allow new variables to emerge and deepen the investigation.

Some of the disadvantages of open questions are that they leave much room for subjectivity, both in their structure and in the interpretation of the results. The respondent may be led into difficulty when asked to respond if the syntax of the question is poor. The processing of queries is time-consuming and requires analysis of the content of the answers to codify and classify them (Duverger, 1976, in Vamvoukas, 2007). Open questions are, in general, appropriate in subjects with strong incentives for cooperation in the realisation of research and have a relatively high level of education (Vamvoukas, 2007).

On the other hand, closed questions restrict the freedom of the subject and cite some predefined responses from which the examinee must choose. These types of questions do not enable the respondent to add comments, explanations or justifications for the answers given, and as a result, the risk is that categories do not entirely cover the topic and contain bias (Oppenheim,

1992, in Cohen, Manion & Morrison, 2007). Despite this, closed questions are easy for the research subjects to complete and can be relatively easily analysed and coded by the researcher (Wilson & McLean, 1994, in Cohen, Manion & Morrison, 2007). Both types of questions have advantages and disadvantages. The choice of one or the other type of question depends on the purpose of the investigation. In general, no formula is entirely sufficient for the establishment of a scientific questionnaire. Therefore a questionnaire should include a combination of all types of questions (Vamvoukas, 2007).

The anticipated response rate is between 10% and 20% (Denscombe, 1998), which translates to between 6 and 13 responses from the 62 invitations sent, because questionnaires can be seen as a cold form of communication between the researcher and the participants (Denscombe, 1998).

### Overview of the research tools used in the present study

The teachers were asked to give their opinions on what the barriers to fully accessing the school's outdoor education were, the means to overcome them, and to what extent they considered outdoor education to be beneficial.

The interviews intended to capture the voice of the teaching staff who were invited to give their opinions on questions regarding education for sustainability and outdoor education about the impact the above have on pupils, possible barriers and reflection on parents' stances. The interviews were analysed thematically. The parents were asked about the impact environmental education and outdoor education have on their children, their sources of information regarding outdoor education and environmental education and whether they considered the school's ethos to outdoor education and environmental education as a stance that could promote inclusion. The parents were also asked general questions about their opinions on FS. The observations were used to measure student 'involvement' in the learning process, both indoors and outdoors, and compare them to measurement scores when the children were involved in free play outside.

The observations were semi-structured and designed to capture the different settings in which the interactions and behaviours of the pupils took place. The pupils being observed had previously given consent; consent was also asked for and obtained from their parents. The observational research tool (Appendix 9) was designed following the Laevers (2012) LSI, which allowed the researcher to observe and listen to the children in different contexts (Gray, 2004). To reduce the learners' stress and disturbance within the school grounds, for ethical reasons, I had previously spent time with the class in order not to appear as a mere outsider.

The questionnaire was developed to fit the purpose of this research (Pawson & Tilley, 1997) and, adopting Pawson's (2006) suggestions, the quantitative aspects of the data in this research tool were implemented for the questionnaire to support the understanding of the school's ethos regarding environmental education and the stances of the parents towards outdoor education and their perspectives on FS. The researcher developed the questionnaire (Appendix 8), and a member of the school staff and a member of the university piloted the research tool.

The time needed to complete the questionnaire did not exceed 14 minutes in both cases. The questionnaire was primarily developed to give options for specific concepts to try to capture the parent's views. Moreover, this research tool was designed to answer the research question of the present study, while it was simple to fill in and brief (Cohen et al., 2011).

The interviews were essential to the case study design and, following Yin's (2014) suggestions, they were targeted and insightful. The primary purpose of this research tool was to gather information regarding the FS and the school's ethos from the teaching staff and capture their stance on environmental education. The interviews allowed specific questions targeted at the opinions of the staff regarding how the FS sessions worked and how they could affect the pupils. They also allowed more open-ended questions regarding the participant's stances on outdoor education. In some cases, the teacher being interviewed may have been tempted to answer the questions in a way they thought would give the interviewer what they thought he needed to hear (Yin, 2014). The researched tried to avoid this. In particular, follow-up questions were asked for the interviewees to elaborate on their stances.

Moreover, the interviews were recorded with the participant's consent and an explanatory participant information sheet was read to the person being interviewed before the process. All of the participants had given written consent to participate in the research (Cohen et al., 2011). In line with a realist ontology, the interviews also sought to unravel hidden mechanisms within the FS sessions and illuminate the case study (Pawson, 2006).

### Stages of coding in this research

Silverman (2000) suggests that many researchers know that these categories are 'hypothetical constructs' (2000, p. 827) that are useful on the one hand, but on the other, they are never absolutely precise in a way to correspond to the sides of reality they try to approach. In the first stage, the data from the interviews will be carefully read and assigned a tag. The researcher will then reread the qualitative data, search for statements that may fit into any of the categories and review any patterns or repetitive answers. The final stages will consist of reading through the

raw data for cases that explain concepts or illustrate the analysis. The coded data will be organised into themes. Similar units will be grouped into first-order themes (Biddle et al., 2001) and separated away from units with different meanings. The same process will be repeated organising higher-order themes as much as possible.

The interviews will follow a thematic analysis approach and more specifically microanalysis. According to Berelson (1971), the categories for the analysis should be defined as accurately as possible so that other researchers can reach the same results if they were to apply the categories in the same context.

The thematic analysis does not stop with the creation of a catalogue of elements to which opinions and stances are assigned. The thematic analysis in this research also follows Braun and Clarke's (2006) stages of thematic analysis, which suggest that thematic analysis is a method for identifying, analysing and reporting patterns and themes within data.

I chose thematic analysis as it is a flexible tool that can be used to support the accurate development of educational research (Webb & Pearson, 2012). According to Webb and Pearson (2012), thematic analysis allows the identification of recurring ideas emerging from the data. The responses of the participants can then be coded into themes and indicate a rigorous analysis. The decision to use thematic analysis in the present research to approach the qualitative interview data was also influenced by Gubrium and Holstein (2009), who suggest that the researcher can also use thematic analysis to discover how people see their world influenced the above decision.

In more detail, I followed Braun's and Clarke's (2006) suggestions, familiarised myself first with the data (Stage 1), and then generated initial codes (Stage 2) and searched for broader themes by reviewing the previous codes (Stage 3). When the initial three stages were completed, I then reviewed the emerging themes (Stage 4) and defined and named the themes (Stage 5). The last step was to produce the analysis (Stage 6).

The data were combined to yield something "live and authentic" (Silverman, 2000 p. 825) that corresponds to the vivid communication between the researcher and the subject. The trustworthiness of the data was ensured via triangulation. The different data sources were combined to demonstrate trustworthiness in the analysis (Holloway & Wheeler, 2009).

As Auerbach and Silverstein (2003) suggested, "once transcribed, a list of initial codes were developed that appeared to represent key ideas from the data, these were then considered

further and” categorised “into broader themes as an implicit topic that organises a group of repeating ideas” (ibid, p. 37).

An example of an interview extract, taken from the semi-structured interview of the FSL appears below. The extract can be found within the theme of ‘barriers’ because it highlights the difficulty of running FS sessions in a timed and crowded curriculum.

*Table 4: Interview extract*

<b>Extract</b>	<b>Code</b>	<b>Participant Data Code</b>
‘It could be far more beneficial if they did more of it. Yeah, there is... until the children are used to being outside, they do not adjust quickly enough to learn from it. They spend all they are e time adjusting to it, not learning from it, which is you know, quite difficult.’	Children need the time to adjust: time as a barrier	Interview A (Appendix 10)

## Ethics

The researcher sought and acquired ethical clearance from Anglia Ruskin University (Appendices 6 and 7) to initiate the data collection stages. The researcher also sought to acquire informed consent (as follows) from the participants who were informed verbally at first, regarding the procedures, methods and goals of the research orally. They also received a participant information and consent form to sign (Appendix 5) and return to the researcher before the data collection.

The researcher and the teachers talked with the children before the project to enable them to participate with informed verbal consent or to decline involvement in the research. Children, parents and teachers were made aware of the right to withdraw from the project at any time, respecting their autonomy (Huycke, 2000).

A child-centred paradigm was adopted so that at all times children’s needs and experiences were prioritised over research objectives. The risk assessment included child

protection considerations and the researcher held a clearance within the school. The clearance was obtained through Anglia Ruskin University's services and was a current enhanced Disclosure and Barring Service clearance status by the requirements of the Every Child Matters Agenda (DfES, 2004).

All of the participants were informed verbally at first, regarding the procedures, methods and goals of the research orally and they all received a participant information sheet (Appendices 1 to 4) and consent form to sign and return to the researcher before the data collection. Invitation emails were sent to the parents and the teachers, which included specific information about the research, the experiences anticipated for the children, and health and safety information. These invitations also contained detailed information about the research, its aims and goals, what evidence would be collected and how this would be disseminated more widely. In keeping with the General Data Protection Regulation (GDPR) (1998), they also made explicit that the data collected were kept secure, held as confidential and presented anonymously.

So the participants could reflect on their efforts at the end of the research, the participants received a summary of the findings via emails that the school sent to parents and teachers.

While the project as a whole cannot be characterised as high-risk, the central consideration was about disturbing the school environment, especially while a teaching session was taking place, only by the presence of the researcher as a new person and the fact that this process might be a new experience to the pupils. The previous two parameters could have caused frustration to the children. The researcher, as a primary school teacher, has worked in mainstream primary schools in the special education sector. He was responsible for organising the teaching methods and work plans and promoting the socialisation of pupils dealing with cognitive difficulties back to mainstream classrooms. The researcher has been a teacher and, knowing how precious time is while organising a teaching session, considered the teaching staff's suggestions on how to ease the process and considerations of his presence the pupils might have during class.

To ensure that I did not directly disturb the teaching processes, my presence in the classroom was as mild as possible. Having first been introduced to the class and with permission from the teaching staff, I quietly observed the sessions.

I also tried to be flexible in attending the setting and aimed to fit in with the activities as they occurred during school time so that opportunities for data collection were not missed. The participants' parents or legal guardians were asked to give their informed consent before the children took part in any research, and the research programme, its goals, aims and importance

were first fully explained verbally to the pupils. Additionally, the children were given a participant information form addressed directly to them and a consent form to sign and return to the research team before any collection of data. In line with BERA (2012) (British Education Research Association) guidance, adults, including some of the parents and both of the teachers of Y3 and Y4, supported the children to make an informed decision about participation in the research.

Any notes or copies of information that were collected were kept carefully and securely in a locked filing cabinet. Notes and audio files were uploaded onto a password-protected university computer and were accessible only to the research team. To ensure anonymity, the school, staff, parents and children were referred to by pseudonyms.

All data generated were treated in the strictest confidence. Following standard research ethical principles, the participants' names and locations were anonymised using numerical codes to identify participants. Both the university computer and the laptop computer the researcher used were password protected, while any manual files regarding sensitive data of the participants were protected in a locked cabinet at Anglia Ruskin University.

### Validity and reliability

Smith and Noble (2014) highlight that acknowledging and identifying potential researcher bias and epistemological assumptions are essential to optimise research validity. My own researcher bias might be influenced by my teaching experience, where I observed strong outcomes for children's learning, well-being and development. Because of this, and considering that the case study was descriptive and exploratory, I expected that it would have been more likely that the project would identify the FS approach as supporting improvements in children's learning, well-being and development. However, this research focuses on the involvement of the pupils through the LSI to measure children's involvement in outdoor settings.

I also tried to minimise my bias by working with the school staff throughout the project. In particular, in an attempt to avoid bias, I drew from Gough's (2007) framework and conducted an inter-rater reliability check with the help of the school's eco-coordinator for the initial themes that emerged. However, the sample used was extremely small despite my efforts to include more participants. In addition, the research used a very small sample of participants; hence this research has developed a framework that enables the comparison of similar educational programmes, which can be fruitful to all who engage in the learning process.

As Pike (2015) noted, social scientists have long debated whether their knowledge is objective or subjective and hence have argued (Pike, 2015) that the tools developed for describing

behaviours could be adapted to the description of any human social behaviour. Pike (2015) turned away from an epistemological debate and instead moved forward to a methodological solution. The emic approach investigates how people think (Kottak, 2006), perceive reality and rules for behaviour, and identify what has meaning for them, while the etic approach shifts from the focus of personal interpretations to those of the researcher, who in such an approach tries to act culturally neutrally, limiting any political and/or cultural bias or alienation (Kottak, 2006). For this reason, the research combined the emic and etic approaches to obtain the 'richest' view of the society studied. As I have worked as a teacher in several schools in Greece and England, I can be considered to have an emic perspective on educational settings. However, I had not worked as a teacher in England before completing my data collection stage so in this sense I could be considered to have an etic perspective on English educational settings. Even though emics and etics are by nature in conflict, and sometimes a researcher may be biased to exclude one over the other, I adopted Xia's (2011) belief that when both emics and etics are considered the researcher approaches a more 'rich' view of reality.

Even though the use of terms such as "reliability and validity" are mostly "common in quantitative research", they have been "reconsidered in the qualitative research paradigm" (Golafshani, 2003, p. 597). Joppe (2000) describes reliability as 'the extent to which results are consistent over time' and continues "if the results of a study can be reproduced under a similar methodology" (2000, p. 1). This citation encloses the idea of replicability or repeatability of results or observations.

Silverman (2006, p.282) suggests that "to ensure validity in qualitative research, it is essential to have transparency of both theoretical" and practical procedures "to ensure the context, method and theoretical framework of the research". The particular research involves different participants and perspectives, which adds a more robust answer to the investigated research question and complies with Silverman (2006, p.282), who claims that "the use" and combination of "several or multiple methods of data collection which, when analysed together, can provide a bigger picture as to the object of the research". By using a range of methods, the research aims to strengthen contextualisation and improve its discussion of findings through triangulation. Yin (2014) claims that mixed-methods research can permit addressing complicated research questions and collect "a richer and stronger array of evidence that can be accomplished using a single method alone" (p. 63). Similar to Kenny (2010) in the present research, breadth is preferred to a large sample size. "Breadth was addressed through rich contextualisation using a range of methods including standardised indicators" (2010, p.26).

The discussion in this thesis (see Chapter 6) consists of the interpretation of the data collected by the researcher and is treated within a critical realism ontology, as human knowledge only captures a small part of a deep and vast reality (see Chapter 4). All research tools and analyses were designed to answer how children can fully access the outdoor education curriculum with a particular interest in children with SEND statements. In particular, critical realism recognises that in open systems, the outcomes of research are different for everyone because of individual differences and the participants' stances and opinions. Hence, the present research recognises that its conclusions are not necessarily applicable to every child who attends FS regularly. The generalisation of the findings in this perspective and the replication of the findings through the same research design are both limited as children who attend FS may alter the underlying mechanisms in unobservable ways. Even replication with the same groups of people could reveal new emerging data as 'our actions are always prone to change the conditions that prompt them' (Pawson, 2006, p. 18). Hence, the findings of this study cannot be generalised in every case, as mentioned previously, not only in its ontological assumptions.

This approach also allowed the researcher to use a variety of types of data (qualitative and quantitative) and a combination of research methods (observation, interviews, questionnaires and research tools) to answer the research question, to obtain a holistic view (Denscombe, 2014). The case study method offered the means to investigate complex social units consisting of multiple variables of potential importance in understanding a phenomenon. Often this case study's results are rich and holistic, offering insights and illuminating meanings. Moreover, case studies have proven particularly useful for studying educational innovations, evaluating programmes, and informing (Merriam, 1998).

I believe that one of the main strengths of the research is that the epistemological approach I used takes a holistic approach to educational research as it uses three different research tools to approach the research question. The need for such an approach regarding a question involving learning in outdoor education can also be partly justified by Brody (2005). According to Brody (2005), learning in outdoor frameworks is a complex synthesis of different factors that include individual characteristics and mostly perceptions and stances of teachers and pupils, social and cultural data, and quantitative aspects of the outdoor environment. This made the need for an approach with a mixed-methods design even greater. Brody's (2005) claim also reinforced my decision to use other sources of information such as the way teachers and pupils use an outdoor environment, as a programme of environmental education, as a field of pedagogy,

and ways to include similar environmental programmes in the national curriculum, to explore my research question (Comber, Nixon & Reid, 2007).

## Conclusion

This study aims to collect idiographic knowledge affixed to social science (Outhwaite, 1983). The research methodology I adopted lies within a critical realist approach to determine the hidden or underlying tendencies (Bhaskar, 2013). These tendencies exist within the way an FS can facilitate learning for pupils, including pupils with learning difficulties. Through the research framework presented in this chapter, it is clear that knowledge in open systems always lies within the context of the open system where the phenomenon takes place. Therefore this research approaches the research question to seek conceptual meaning within a bounded system (Yin, 2014; Stake, 1978) and combines different sources of data sets to understand and enlighten the research question through everyone whom educational stakeholders involved in the learning process, including parents, teachers and pupils. The observations were conducted through the LSI, which measures student involvement in the learning process. Furthermore, the research used semi-structured interviews to collect qualitative data from the educational staff. The research is informed quantitatively through a survey used to collect data from the parents of the pupils.

The semi-structured interview that was used to collect data from the teaching staff is a flexible form of structured interview that allowed deepening in various subjects. The LSI has been used before in education to assist in summative assessments and learning and the key development characteristics of effective learning (Kenny, 2010). The survey was conducted with a semi-structured questionnaire to collect data from the parents. This research tool was selected to collect data from 62 invited participants. However, the response rate was between 10% and 20%. The questionnaire was developed to fit the purpose of this research to collect quantitative aspects of the research

## Chapter 5 Findings and analysis

### Introduction

This chapter will describe the findings from the analysis and introduce them to the thesis. The chapter begins by describing the statistics that come from the online survey completed by the parents of Y3 and Y4 pupils in the school. Three research tools were used when targeting three groups of people involved in the teaching process: the pupils (five Y3 pupils and five Y4 pupils), the teachers (five in total) and the parents (14 in total) who have children in Y3 and Y4. The questionnaires addressed the parents, the interviews were conducted with the teaching personnel of the school, and the observations were carried out on pupils of the school in three different settings.

The chapter continues with a discussion in which all three data sets are used to discuss the main question of the thesis:

✚ How can Forest School support inclusive practices?

The observational data emerging from the children inform the research on the impact of FS on children's involvement. The interviews with the teaching staff and the questionnaires that were distributed to the parents both shed light on the way children engage in outdoor education and inform the research on parents' and teachers' opinions regarding children's involvement in outdoor environmental education.

The chapter continues by comparing the findings of the observation checklist that used the LSI to measure student participation in three different settings (outdoor, indoor and during FS). Ten children were observed (five pupils from each class): three boys and two girls from Y3 and three boys and two girls from Y4. There were 20 observations indoors for Y3, 20 during the FS and ten during the children's playtime. The same number of observations happened for Y4. One of the girls in Y4 and one of the boys in Y3 had been diagnosed with learning difficulties: the boy with an autistic spectrum disorder and the girl with general mild learning difficulties. In total, 100 two-minute observations took place. The last part of the chapter discusses the teachers' stances and opinions through a thematic analysis from the interviews with the five teachers in the school.

### Approach to data analysis

A pilot study took place in the school setting before the data collection stage. The purpose of the pilot study was to identify the school setting and test the questions to be used in a panel interview with the Y3 and Y4 teachers. The approach to the data analysis was not piloted.

The quantitative observational data are described through the use of graphs as a source of measurements of student involvement when they were learning outdoors, indoors and during their free time in the playground. In total, 100 observations were conducted: 20 observations indoors, 20 during the FS and ten during the children's playtime for each class. Each observation lasted for two minutes, and each child's average scores in each setting were used to inform the graphs in this chapter. All qualitative elements of the research are analysed by thematic categorisation of the data and discussed within the context of the different learning environments used to explore any links between them, while the questions the participants were called to answer were formed according to the research objectives. The questionnaire responses were summarised through Google's analysis offered in GDocs surveys. GDocs survey allows the creation and distribution of a questionnaire that was sent to all parents of Y3 and Y4 (see Appendix 8).

### Involvement indoors, outdoors, playtime

The choice of settings to measure children's involvement levels is a crucial aspect of research into educational effectiveness. The three settings of learning indoors, learning outdoors, and playtime have been selected in previous studies due to their representativeness of different aspects of a child's school experience (Ballantyne, & Packer, 2009). These settings have been identified as influential in shaping children's attitudes towards learning and their overall academic performance (Ridgers et al., 2012). Therefore, assessing children's involvement levels in each of these settings is necessary for a comprehensive understanding of the learning environment.

Learning indoors is a traditional setting for education, where children receive instruction from teachers and engage in classroom activities (Kuo & Taylor, 2004). Indoor learning environments have been found to have an impact on children's motivation, engagement, and academic achievement (Van Dijk & Berg, 2020). Children's involvement levels in this setting are therefore important to assess to determine the effectiveness of classroom instruction and activities.

Learning outdoors, on the other hand, involves experiential and hands-on learning, often through nature-based activities (Prince, 2019). FS enhances children's creativity, problem-solving skills, and emotional well-being (Dyment & Bell, 2008a; 2008b). FS can provide a more stimulating environment that encourages children to be actively involved in their learning; thus assessing children's involvement levels in this setting is crucial in understanding the benefits of outdoor education.

Playtime is another important aspect of a child's school day, where children interact with their peers and engage in physical activity. Playtime is essential for children's social, emotional, and cognitive development and their physical health (Janssen & LeBlanc, 2010; Timmons et al., 2012). It provides an opportunity for children to engage in unstructured and self-directed play, which can enhance their creativity and problem-solving skills. Assessing children's involvement levels during playtime is important in understanding the role of play in the overall school experience.

The LSI has been used in previous studies to measure children's involvement levels in different settings (Laevers, 2005). The LSI assesses children's active participation and concentration during activities, which are important indicators of deep learning and engagement. The LSI is a reliable and valid tool for assessing children's involvement levels in various educational settings (Storli et al., 2020). The use of the LSI in this study provides a standardised and objective measure of children's involvement levels in the three different settings.

Comparing children's involvement levels across the three settings can provide valuable information about the effectiveness of each setting in promoting deep learning and engagement. Previous research has found that outdoor learning environments can enhance children's involvement levels compared to indoor settings (Ballantyne et al., 2009; Ridgers et al., 2012). Other studies have found that playtime can have a positive effect on children's motivation and engagement in the classroom (Storli et al., 2020). Understanding how involvement levels vary across different settings can provide insights into how to design and implement effective educational programmes that promote deep learning and engagement.

### Interview data

The analysis of the interviews involved reading and coding the interview transcripts and then collating the coded sections of texts into themes. These themes were elaborated to explain the underlying processes that influence the participants, particularly their environmental opinions, social values and the effectiveness of the school's environmental programme. NVivo 10 and MS Excel 2016 computer software were used to help with the analysis where needed. In more detail, the coding of the thematic analysis was conducted through NVivo 10, and the graphs and the averages from the observational data were created through MS Excel 2016. The decision to use the previous software was taken after the suggestion of Welsh (2002) that NVivo is relatively simple to use, as it allows documents to be imported directly from a word processing package and start the coding process immediately and easily on screen. Through the previous software 'coding stripes can be made apparent in the margins of documents so that the researcher can

see at a glance which codes have been used where. Also, it is possible to write memos about particular aspects of documents and link these to relevant pieces of text in different documents' (Welsh, 2002, p. 2).

In more detail, the data analysis regarding the interviews consisted of three procedures, as suggested by Miles et al. (1994):

- The data reduction, where the mass of qualitative data, including interview transcripts, observations, field notes and the qualitative elements from the questionnaires, are reduced and organised, through coding, summarising and discarding irrelevant data.
- The data display, where conclusions are drawn from the mass of the data through the formation of tables, charts and networks.
- The verification, where the analysis of the data allows initial conclusions to be drawn.

Each code represented a category into which a piece of data will be placed (Miles et al., 1994). The codes should be valid and reflect previous FS research that used a thematic analysis similar to Massey's (2004) research so they can accurately reflect what is being researched.

### Parents' survey

Environmental education has been recognised as an essential part of a child's learning and development in recent years. Environmental education provides children with an opportunity to learn about their natural environment and to develop an understanding of their role in protecting and preserving it. In this context, the use of questionnaires with parents on environmental education for children serves as a vital tool for understanding the parents' perspectives on the importance of environmental education in their child's life.

The current thesis aims to explore the benefits of FSs and outdoor education for children, including those with SEND. One of the critical components of this exploration is understanding the role of environmental education in children's learning and development. Environmental education is an essential part of outdoor education and can enhance children's experience of nature while encouraging them to take an active role in preserving and protecting their environment. Therefore, questionnaires with parents on environmental education for children are highly relevant to the rationale and aims of the study.

Garden and Downes (2023) highlight that children engaged in outdoor education programmes like FS tend to cultivate environmental awareness and a sense of responsibility towards nature. These programmes offer vital experiences for children to interact with and learn from the natural world, fostering an appreciation for the environment and a commitment to its

preservation. Additionally, using questionnaires to gather parents' perspectives reveals the value they place on environmental education and their observations on its influence on their child's learning and personal growth.

Furthermore, including a focus on environmental education in the study aligns with broader societal goals to promote sustainable living practices and environmental stewardship. The United Nations SDGs highlight the importance of environmental education in promoting sustainable development. SDG 4.7 aims to ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship, and appreciation of cultural diversity and culture's contribution to sustainable development. As such, the inclusion of questions regarding environmental education in the current study supports broader goals of sustainable development and aligns with a wider societal push to promote sustainability.

The use of questionnaires with parents on environmental education for children is highly relevant to the rationale and aims of the current thesis. Environmental education is an essential component of outdoor education, and its inclusion in the study aligns with broader societal goals of promoting sustainable development. The insights provided by parents' perspectives on environmental education will contribute significantly to understanding the role of environmental education in children's learning and development and ultimately inform the development of an effective FS for all children.

### Observations: children's involvement

This research tool is used to measure involvement in each of the three settings. Involvement here is thought of as the active participation of the child when it acts at the limits of its capabilities and shows signs of concentration (see p. 181). The 'children's involvement' section derives from this measurement and is not directly captured from the children but comes from my observation of them.

The data presented here derived from the observational LSI levels (Laevers, 2012) and were used on two groups of pupils consisting of five individuals each. The first group attended Y3 while the second attended Y4 of the same primary school. This scale was developed as a measure of 'deep learning' and the effectiveness of the learning environment. It uses a five-point system based on the involvement of pupils in the learning process (see p. 127). The lowest rating is Level 1, which suggests little or no deep involvement with learning taking place while Level 5,

the highest rating, suggests total concentration (Laevers, 2012, p. 25). Notably, its developer suggests that unless the learner is operating at 4 or 5, their learning will be limited.

My familiarity with this research tool was strengthened through tutorials organised by the research supervisor, which included a standardisation procedure via video material through amendment checks.

Pascal et al. (1997) termed this tool the Child Involvement Scale; it is also used in settings in the EEL (Anning & Edwards, 2006). More recently, other researchers have justified its use by supporting the notion that the LSI can assist with EYFS assessments and with key characteristics of effective learning such as learning and development (Kenny, 2010). These characteristics are the active participation of pupils in the learning process, the will to play and explore on behalf of the pupils, and enabling pupils to think and create critically (EYFS, 2012).

The main purpose of this research tool was to investigate the involvement levels about three different environments to measure their access to the outdoor curriculum. When children are involved in the process, they enjoy a higher level of access to the curriculum. When children have high access to the curriculum and are involved in the learning process, they are included with their peers in the school. The three different settings where the children were observed were learning outdoors, learning indoors, and during their playtime. A total of 100 observations for both years were conducted (see p. 181). Each child was observed for two minutes when the child was learning indoors, when the child was learning outdoors, and when the child was playing during recess in the outdoor environment of the school. Each child was observed four times when they were learning indoors, four times when they were learning in the FS sessions, and twice when they were playing outside. A score from 1 to 5 was given to each of the following 11 factors during each observation. The factors included the child's concentration, energy, complexity and creativity, facial expression and posture, persistence, precision, reaction time, language and satisfaction. The scores the child received were averaged over the 11 factors to measure the overall involvement score of the child in the setting in which the child was observed. To compare the children's overall involvement in each setting, I created the following table (Table 1.1.2) by calculating the average scores of the child's involvement in each of the settings.

Table 5: Comparison of Y3 and Y4 observation averages

SETTING	Y3G1	Y3B1	Y3G2	Y3LDB	Y3B2
INDOORS	4	4	4	3	4
PLAY	4	3	3	3	3
FOREST SCHOOL	4	4	4	4	5
SETTING	Y4B1	Y4B3	Y4G1	Y4B2	Y4LDG
INDOORS	5	5	5	5	4
PLAY	5	4	5	5	3
FOREST SCHOOL	5	5	5	5	5

The numerical pseudonyms represent the year in which the children were and their gender, and they show whether they were diagnosed with a learning difficulty and had provided to the school a corresponding statement. For example, Y3G1 is a girl in Y3 without a learning difficulty, and Y3LDB is a boy in Y3 with a SEND statement.

### Y3 Observation involvement measurements

Table 6: Y3 comparison of averages of involvement scores

	Y3G	Y3B	Y3G	Y3LD	Y3B
	1	1	2	B	2
INDOORS	4	4	4	3	4
PLAY	4	3	3	3	3
FOREST SCHOOL	4	4	4	4	5

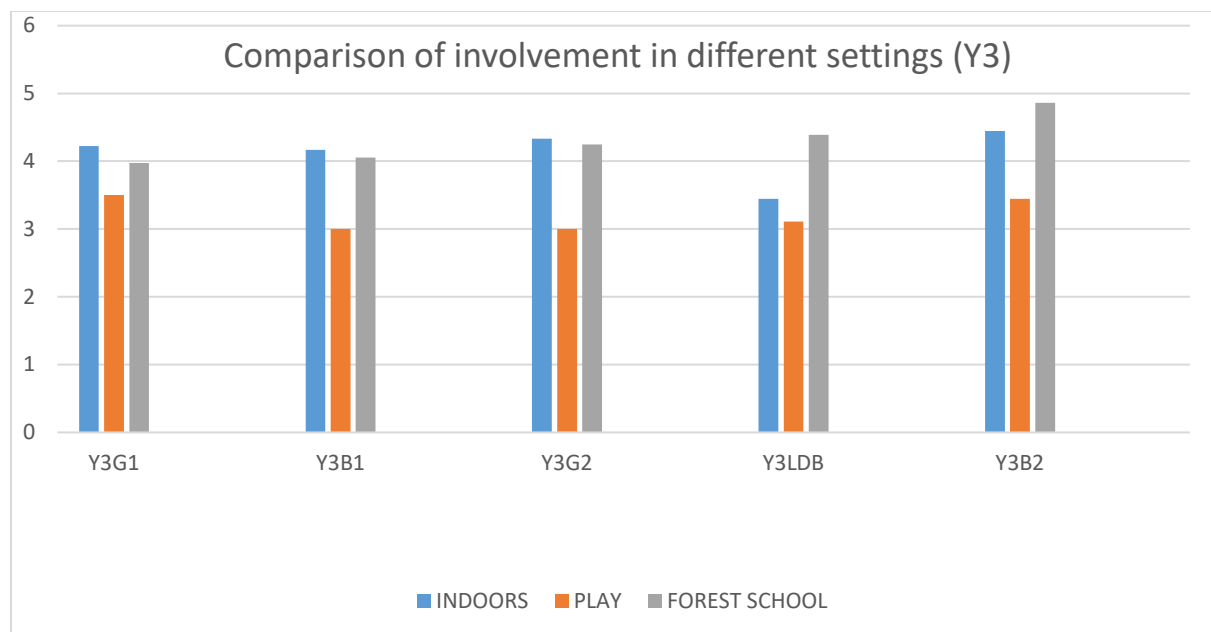


Figure 5: Y3 comparison of averages of involvement scores

Y3G1 seems equally involved (4) in all three settings while Y3B1 seems involved (4) equally during indoor learning and outdoor learning. He seems, however, less involved during playtime, scoring 3. Notably, the playtime was during the children’s recess in the outdoor environment at their school. Y3G2 also seems equally involved while indoors and outdoors (4) but less involved during play (3). Y3LDB seems most involved during the FS sessions outdoors (4) and less involved during the indoor sessions (3). Y3B2 seems most involved during the outdoor sessions (5), less involved during the indoor sessions (4) and least during play (3). It would appear, therefore, that the overall finding of the observations conducted for the children attending Y3 suggests that children are most involved in the setting they operate during the FS sessions in the outdoors.

## Y4 Observation involvement measurements

Table 7: Y4 comparison of averages of involvement scores

	Y4B 1	Y4B 3	Y4G 1	Y4B 2	Y4LD G
INDOORS	5	5	5	5	4
PLAY	5	4	5	5	3
FOREST SCHOOL	5	5	5	5	5

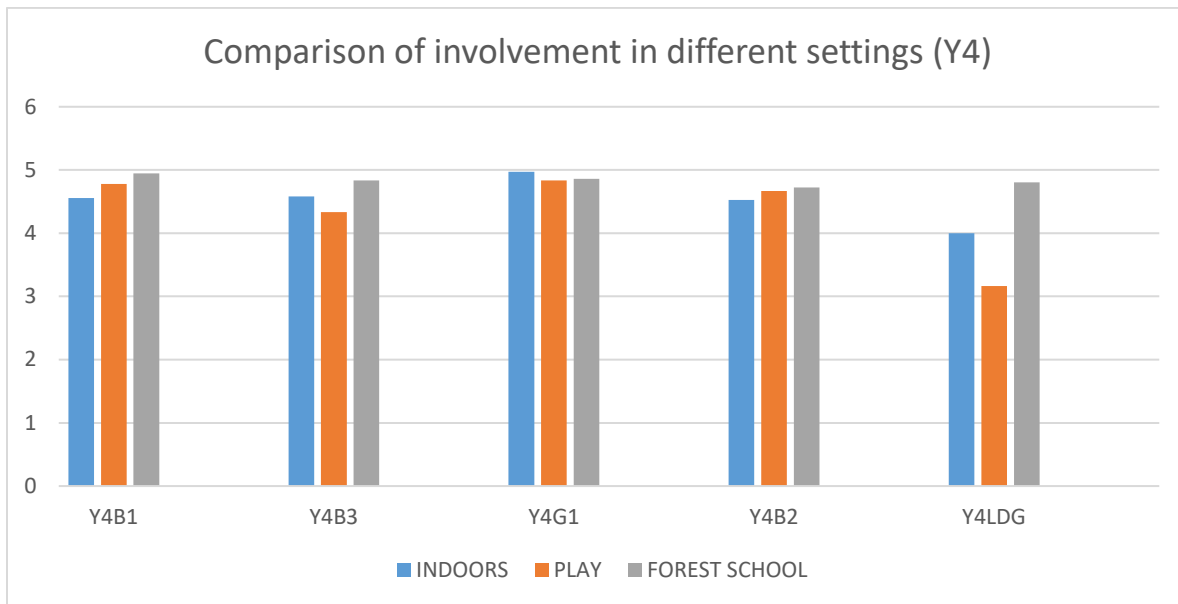


Figure 6: Y4 comparison of averages of involvement scores

Y4B1 seems to be equally involved (5) in all three settings, while Y4B3 seems to be as much involved (5) in the indoor sessions as in the outdoor sessions and less involved (4) during play. Y4G1 seems to be equally involved (5) in all three settings. Y4B2 seems also to be involved (5) equally in all three settings. Roe and Aspinall (2011a) suggest that FSs can positively influence children with behavioural difficulties. Y4LDG seems to be most involved (5) during the outdoor FS

sessions, less involved (4) during the indoor sessions and least involved (3) during play. Notably, all the children seem to be most involved (5) during the FS sessions, indicating that the FS sessions can be an effective tool for the involvement of pupils in the learning process, and while most of them score the highest (5) during indoors as well, Y4LDG scores 4 in that setting. The data emerging from the observation with Y4 suggest that Y4LDG is most involved in the learning process during the FS sessions when compared to her involvement scores in the indoor sessions. This finding adds to Cree's (2009; 2011) claim that child-led activities can be experienced in FS.

When looking at the overall scores of the involvement in all three different settings for the children in Y4, it would appear that like the children in Y3, the children in Y4 have higher involvement scores during the FS sessions. If we consider that involvement is synonymous with higher levels of access to the curriculum in these contexts for the children in Y4, the FS sessions provide better access to the curriculum as the boy with learning difficulties in Y4 scored 5 in the FS sessions and 4 in the indoor learning sessions.

Notably, the data emerged through observation. The children were not directly asked to give their own opinions regarding their involvement in these settings. The girl with learning difficulties from Y4 seems to enjoy deep-level involvement in both learning settings; however, she seems to be most involved during the FS sessions. The possibility of accommodation of involvement through outdoor education becomes more apparent for Y3LDB, who scored 4 only during his FS sessions.

Overall, the data emerging from the analysis of the observational tool suggest that both children of Y3 and Y4 without any learning difficulties enjoyed deep-level involvement during both the indoor and the outdoor sessions. However, the boy in Y3 who had learning difficulties had limited involvement in the indoor learning sessions. Despite this, his learning during the FS was not limited. On the other hand, the girl in Y4 who had learning difficulties did not have limited involvement in the learning sessions indoors as she scored 4 in the classroom learning sessions. However, she was most involved during the FS sessions as she scored 5 outdoors. Hence, this study adds to Pawson and Tilley (1997) who negotiated the question 'for whom' FS works.

Recent research has explored the relationship between outdoor learning environments and children's academic and social-emotional development. For example, a study by James and Williams (2017) found that children who participated in outdoor learning programmes had better academic outcomes and improved social-emotional skills compared to those who did not.

In the context of FS, O'Brien and Murray's (2007) research found that children showed increased confidence, independence, and risk-taking behaviours after participating in the programme. These findings suggest that outdoor learning environments like FS can promote the development of important social-emotional skills that are crucial for academic success and overall well-being.

The observations in the study on child engagement in FS support these previous findings. For example, the children's enthusiasm for the programme and their engagement with the natural environment indicate that they are developing an appreciation for the outdoors and an understanding of the interconnectedness of the natural world. These experiences are important for promoting environmental awareness and stewardship, which can lead to long-term benefits for both the individual and society as a whole (Chawla, 2015). The observations on risk-taking behaviours in FS are also significant. While a perceived risk is associated with outdoor learning environments, research has shown that these environments can be beneficial for promoting healthy risk-taking behaviours. By allowing children to take appropriate risks in a controlled environment, such as climbing trees or using tools, they can develop important risk management skills and increase their confidence and resilience.

Overall, the observations on child engagement in FS suggest that the programme can have a positive impact on children's social-emotional development, independence, and risk-taking behaviours. These findings align with previous research on the benefits of outdoor learning environments and highlight the potential of FS to promote inclusive practices that support the development of all children.

The remaining two research tools this study used now move from measuring involvement to evaluating the pupils' learning experiences.

In more detail, the study will now be informed through interviews on how pupils benefit from the outdoor sessions. Furthermore, the chapter will present the findings and the analysis from the survey. The survey was distributed to parents of Y3 and Y4 pupils to capture their stances regarding environmental education and outdoor education.

### Interview data: the voices of the teachers

To thematically analyse the interviews I transcribed, I familiarised myself with the data until I could generate the initial codes. I then searched for themes by reviewing the previous codes and then reviewed the emerging themes. Finally, I defined and named the themes. The themes that emerged from the thematic analysis I conducted are the enablers and disablers of conducting

outdoor education and the impact of outdoor education on children. I present the two major themes that emerge from the analysis of the interviews below and will discuss them further in the next chapter.

### Enabling factors and barriers to conducting outdoor education

This theme focuses on barriers to facilitating outdoor education in the school. The teachers were asked questions relevant to what was troublesome in making the school's focus on outdoor education difficult. The teachers acknowledged time for the children to adjust to being outdoors as an enabler of the FS sessions. The teachers also suggested that proper equipment is essential to conduct the FS.

Moreover, sufficient teacher training and flexibility in the curriculum were acknowledged as enablers of the outdoor sessions. The learning habits of the pupils and their gender can influence their successful participation in the learning sessions. The teachers also stated that sufficient adult supervision and enough parent involvement are required for the outdoor sessions. Finally, to conduct the FS sessions the school needs to embrace an appropriate ethos and policy. This finding agrees with Reed's (2005) claim that boys who engage in outdoor activities can show care and concern for each other.

### *Time for the children to adjust*

Extract 1:

*it could be far more beneficial if they did more of it. Yeah, there is... until the children are used to being outside, they do not adjust quickly enough to learn from it. They spend all their time adjusting to it, not learning from it, which is you know, quite difficult.*

The main Y4 teacher mentioned that children should be doing more of it as they slowly adjust to being outside. Thus their learning out of outdoor education enhances over time and does not reach its potential the very first time the children are taught outdoors.

The FSL also suggested that children need time to adjust. She stated that children need time to get used to being outside of the classroom and doing things differently. Her claim follows Kellert and Wilson's (1993) suggestion for prolonged and scheduled contact with natural environments. In particular, the main Y4 teacher suggested that children who are more practical and ready to have more hands-on learning experiences will benefit the most from the outdoor sessions. She stated:

Extract 17:

*Some of my girls, after a while, start to moan that they're cold or they don't like to get muddy or wet or things like that but with a bit of encouragement they are ok, and it really benefits my lower-ability children who are very practical and hands-on, and I feel that they can learn a lot more by going outside and actually doing things*

According to the Y4 teacher, all children see themselves as the future generation and are therefore eager to participate in the environmental theme of the school. However, time to adjust is key for the outdoor experiences the school offers during FS sessions. The Y4 teacher stated:

Extract 27:

*I do not think anyone's less motivated in the environmental theme, but there are some children who just do not like being dirty and being outside. I think the children here have all had different amounts of experience of being outside and those who haven't spent much time being outside it takes a while to adjust but from speaking to the Forest School leader once they've got used to it and they've overcome getting dirty, and they absolutely love it and try... So I just think it does have an impact and that we're willing to educate children to know that they are actually important in all of this and I've just been taking the year five class who are starting a campaign to save a national park in Africa from an oil company who wants to drill you know, they're so motivated by it all and they feel the responsibility that everybody should feel and I think because they are the future generation and it's a massive factor for them, we just have to make sure they are all understanding they can do their bit and the impact of it all*

The substitute Y4 teacher argued that children who do not like being outside or being dirty could need more time to adjust to the outdoor sessions; however, this was not a major issue for them as they seemed to overcome this difficulty when they experienced the outdoor sessions. She argued that the outdoor sessions can help the children cultivate skills needed for tomorrow's citizens and can have a significantly positive impact. According to OFSTED (2011), this approach to education draws from top-performing countries and provides regular opportunities for experiential learning.

When asked about potential difficulties of accommodating the specific needs of children who might not be able to attend the outdoor sessions, the substitute Y4 teacher stated that policies are implemented to facilitate specific medical needs, while in case of kinetic challenges support is being provided to facilitate physical development. More specifically, she stated:

### *Teacher training*

Extract 20:

*So I think what we could do with is having... well, teachers being educated in it so that the teachers can feel confident that they could do all these things in the areas of the curriculum you can take outside*

According to the FSL, teaching staff training and qualifications could be a possible barrier because many teachers do not feel confident enough to do lessons in the outdoors. However, the FSL also noted the importance of teaching to be qualified to conduct the outdoor sessions. As she said, she has been qualified as a teacher for more than 30 years. In particular, she stated:

Extract 35:

*Well, I have been a teacher... look at the dragonfly... for 30 years... yeah, I qualified in 1983, that is 30 years, isn't it? This is the best thing I have ever done and helped children learn.*

Finally, the FSL argued that teachers should be trained more in outdoor sessions to accommodate common needs such as notifying the children to dress appropriately for outdoor sessions. Another thing she mentioned was that inexperienced teachers do not have the flexibility to overcome certain situations that might trouble the sessions outdoors. Concerning this, she feared that when the conditions were not perfect (e.g., wet ground), the teachers ought to rethink what the session would focus on. She mentioned, for example, that the class could not focus on environmental art when it was pouring rain. This finding relates to Maynard (2007), who argues that teachers who are not trained in child-centred approaches might find it difficult to step back from adult-led approaches.

### *Flexibility within the curriculum*

In addition to this, the FSL mentioned that she would be happy to see more time that was dedicated to the very crowded curriculum of the school spent outside the classroom. In particular, when asked about what she needed the most to conduct the outdoor sessions, she stated:

Extract 2:

*Time within a very crowded curriculum to spend the time outside.*

When asked how difficult conducting sessions for all subjects outdoors was, the FSL answered that teachers were tightly constrained currently to the curriculum and in many cases, it was difficult for them to be flexible enough to fit what they were teaching into an outdoor session.

Extract 6:

*I would if they've got the flexibility to make it fit in with what their programme is you know? You can... I don't know, I don't know where you're from... teachers are very constrained these days*

The Y4 main teacher, however, also mentioned the difficulty of time management to accommodate outdoor sessions within the curriculum. Particularly, she stated:

Extract 15:

*I think it's really the new curriculum doesn't really have anything referring to the environment on it at all.*

When asked to be more specific on the curriculum difficulties and whether she could not take the children outdoors during geography class, she stated that:

Extract 16:

*A tiny bit in geography I think but the new curriculum does allow schools to be a bit more open about what they do but I think therefore it's down to the school and what their philosophy is and I really feel like it should be an important part of every child's curriculum and I think, yeah from an early age I know the preschool that my son will go to from the age of sort of two and a half, three they do Forest School there and so... however, I think from school from age four they are outside and they're learning about all of those things.*

The main Y4 teacher answered that the room she had to move regarding outdoor sessions in geography was very limited, and the particular school's interest and focus on the common goals deriving from outdoor education and environmental education allowed the school this model of learning.

### *Learning habits*

The FSL also stated the experiential approach of the FS sessions particularly benefited children of lower academic achievement. When asked to elaborate on this, the FSL suggested that the children who already succeed indoors are used to the way they learn and therefore find it successful to link this to the time to adjust to the conditions. She stated that children of higher academic achievement might not be used to outdoor learning as it is a different way of learning. Hence, the children's learning style could be a barrier to outdoor sessions. In particular, the FSL stated:

Extract 18:

*Let me think... some of the very intelligent children aren't as practical, so they find things difficult problem-solving things or making things because they're so used to writing something down and learning in a different way that they're not used to the practical side of it, which is why it's important to do that as well.*

### *Gender*

Gender differences could play a role in the conduct of the outdoor sessions. The FSL stated that some girls complain about the conditions of the outdoor setting. However, the Y3 teacher also mentioned gender differences when recalling her experience at another school she worked in that also ran FS. She mentioned that the teacher there was a man who took boys for outdoor sessions. She noticed that the FS there had a positive impact, especially on boys with behavioural difficulties. The Y3 teacher stated:

Extract 19:

*'Yeah, the Forest School teacher in Birmingham, it was a man and he used to take groups of boys out into the forest area and they would build things together so they'd be sawing and cutting and nailing and they'd have to work together as a team to come up with you know, to create something and we found that really helped the issues that they were having kind of at lunchtimes and break times when they were fighting and arguing and things like that, where they actually had to work together and they really enjoyed doing it so they knew they had to behave to be able to do it but it had a real good impact.'*

### *Equipment*

Extract 5:

*Sometimes dress is a huge issue because the children are not used to learning outside and they don't dress properly and also the biggest barrier is to ordinary teachers doing it is lack of experience and lack of flexibility that when conditions aren't perfect you've got to rethink what you're going to do. You know, it's no good wanting to do say environmental art when it's pouring with rain, you've got to think about something else*

The FSL also noted that outfits could be a barrier to outdoor sessions. Characteristically, she mentioned that if the weather was cold outside, the children should be wearing sufficient clothes or if the setting where the session would take place was wet, the participants should wear something that would keep them dry. She stated:

Extract 7:

*Some children find it quite frightening going outside, yes but generally speaking it's something that every child enjoys if they are properly dressed for it, you know... in here you need all your legs and arms covered because of all these things here. A lot of children are put off by inappropriate clothing and dress. You know, if it's cold you've got to have a lot on. If it's wet, you've got to have something on that keeps you dry. I now refuse to take children outside who have not got their arms, legs and ankles covered.*

Surprisingly, however, when asked about the weather conditions being a potential barrier, she answered negatively. If the participants, she said, are dressed properly the weather conditions would make no difference at all in the way the session was run. Specifically, she said:

Extract 8:

*No, they don't make any difference (about weather conditions) if the children are dressed properly, they make no difference at all. I have done this I think for six years... I work four days a week, I have never, ever, ever, ever not done one but you know, like on the day it snows, we all did sliding and friction and slid down the snow on trays. It was planned like that because you have to seize the moment.*

The eco-coordinator for the school, who was also the main Y4 teacher, acknowledged the difficulty of children getting used to the outdoor sessions but informed the researcher that when children got used to the conditions, they enjoyed spending time outdoors and learning through the FS. She also mentioned that the school could not afford the equipment to surpass the potential barrier of the participants being unable to attend the outdoor sessions due to weather conditions or those of the setting.

Extract 14:

*The school's just recently invested in about one hundred sets of waterproof trousers and we're trying to find a way to have children's welly boots in school all the time to make sure we are equipped to go out in all the weather conditions but there's some children and teachers who would rather not go outside when it's wet or muddy and...I think the children here have all had different amounts of experience of being outside and those who haven't spent a lot of time being outside it takes a while to adjust but from speaking to [blinded] once they've got used to it and they've overcome getting dirty and they absolutely love it and try...*

The Y3 teacher also verified that equipment can be a barrier to conducting FS sessions. She stated:

Extract 10:

*It's shown us this year that we can overcome that. We weren't prepared for Forest School... this year we wanted the children to be able to access the outside area all the time. We're quite lucky here, we're quite an affluent area here that you know, children are quite privileged here... we don't have many children on free school meals or anything like that. So, we've kind of requested that the children bring in the resources they need. So, Wellington boots and waterproof jackets... sometimes they forget them but we know they have them on, so what we did to make sure they can access... we bought waterproof trousers for the whole cohort, so that wouldn't be a barrier for us and yeah, sometimes children don't like going outside when it's cold*

The substitute teacher, who took over Y4 after its original teacher went on maternity leave, suggested that finances could affect other schools; however, the school the study was conducted in was not facing money issues for buying proper equipment for the children to be able to attend the outdoor sessions. She acknowledged that it could be a barrier when children or their families could not provide equipment such as heavy clothes or boots. The school where the research took place was enabled, therefore, to overcome the previously mentioned barrier.

#### *Sufficient adult supervision*

The substitute teacher also added that risk assessments were done for the FS sessions and that adult supervision was necessary at all times. She stated:

Extract 12:

*You need to make sure that risk assessments are done and I think... and make sure there's enough adults if you're outside the school boundaries*

She justified the more intensive supervision the school needed as an effect caused by the behaviour of the children when they left the classroom and because of some pupils' physical conditions. She stated:

Extract 28:

*We have some children who have epilepsy, there's a little boy with a heart condition and a little girl that used to have Leukaemia but there are procedures and policies in place to*

*look after them... There's physical development if their needs are... you know, if they're not quite ready for that or if they're not stable enough but I think with support, then they should be able to access all of that.*

#### *Constant parents presence*

Another barrier the FSL mentioned could derive from the parents. She advised the parents to allow the children to get used to outdoor sessions and only visit the child for a few of the early sessions instead of continuing the visits throughout the outdoor programme, as the child could be focusing on its parent and could find it difficult to learn properly from the programme.

Extract 9:

*What I say to parents though is come along for a block of sessions, say four or five and then go away because quite often, if your child is in the class, for your child when you're there they want to be with you and they get used to it over five sessions and you know, you've lost your novelty value after the second one and then but if you just come once, leave it a few sessions and come again, the novelty is there again and the child doesn't leave the parent alone but if you come for a block and then leave it the children get used to it and they start learning form properly because the first time they come, the children love having their mum there. You know and all they do is hang on to mummy all morning and oh, here's my mummy here, you know, and they don't learn because they're too busy being proud of their mummy, which is great that's what kids do.*

The school's eco-coordinator appeared disappointed by the parents' initial stances when she talked to them about the environmental education programmes of the school, as many, according to her, seemed to believe that they could not make any difference on an individual level. In particular, she stated:

Extract 36:

*I just think it's really important but I just see so many adults that behave so appallingly when it comes to the environment and who have a real attitude of... well there's nothing I can do about it, I'm just one person you know, I'm not the one making a difference.*

The eco-coordinator suggested that parents' stances could become an obstacle to environmental education as, she argues, many did not recognise its value. However, she acknowledged that the parents participated in the outdoor sessions and when they became more engaged with it, they valued the experiences it offered. Her acknowledgement concurs with

Dennies et al. (2014), who suggest that the distinctive perspective of parents can provide opportunities for teachers to reflect (Kolb, 1984) on their approach.

Extract 32:

*This school is very supportive and when we have outdoor learning and we want parents to come in and they always come and help, they make sure the children are dressed appropriately and I think the parents of this school are very much... they all sort of hold the same environmental ethos, which other schools might not have so much but definitely parents here are very supportive of it. So it's environmentally friendly but also saving us money and we also have a big push on Forest School and using the outdoor area and teachers, where possible, now are trying to take lessons outside rather than staying inside*

In contrast to the previously mentioned Y4 teacher's opinion regarding the parents, the substitute headteacher noted that the parents were extremely supportive of the outdoor sessions and shared the school's environmental ethos. She also noted that they helped the outdoor sessions as much as possible by providing aid to the pupils and the teachers. Perhaps she was exaggerating, but she also noted that FS could help reduce the school's financial costs and thus they preferred having outdoor sessions to indoors.

She noted, additionally, that the parents were happy to join the children in the weekly outdoor sessions and see for themselves the benefits of their children attending FS sessions.

Extract 37:

*We invited the parents to come for a workshop. So, the parents came in without the children and that was led by Forest School teacher, [blinded], who comes in once a week to the school and she kind of talked to them and showed them practically the benefits of this and they were really, really supportive... once they done that, they were really, really supportive and they made sure the children were really kitted out well for it.*

Moreover, when asked to give more information on the parent-school relationship regarding the parent's stances on outdoor sessions and potential concerns raised, she answered that the parents quickly became supportive of the outdoor sessions once they became more familiar with them. In particular, she stated:

Extract 38:

*No... in terms of being outside and getting dirty clothes and things like that? I mean, the parents have been really supportive and I think that's what has helped by having that workshop initially and being, you know the benefits of it. So, the parents quickly came on board and on side really. Once they understand it...*

#### *School's policy*

Despite having been the eco-coordinator for five years, the Y4 teacher suggested that it was the change of the headteacher and her interest and focus on outdoor sessions and the Green Flag award that gave this momentum to outdoor learning sessions for the school. She stated:

Extract 36:

*I started here probably four years ago and I was the eco-coordinator then but I think it's really in the last year and a half since we've had our new headteacher that it's felt like it's more of a whole school focus and definitely now we've got Green Flag status and an outdoor learning as a whole is much more of a focus for the school in the last year and a half.*

The Y3 teacher mentioned that the challenge lay in schools being more self-sustainable; hence, she directly linked the school's outdoor education to environmental education. She mentioned that the teacher of Y4 who was the school's eco-leader was on maternity leave. She implied that not many teachers in the school specialise in environmental education, so they could not continue the programme efficiently after the eco-leaders left.

Extract 3:

*that schools will have to become self-sustainable... part of that will be the fact that they have this area of native plants I would think. You have to do... you have to... well, you know, don't you? You have to show to get a Green Flag that sustainability is integrated into every area of your curriculum. So, I mean that's probably why I was asked to build a bug hotel with them. Why we make log piles... I think that would be part of it. The teacher... the teacher that does that I think is on maternity leave at the moment...*

She then suggested that for some reason schools were supposed to be working sustainably by 2015. The Y3 teacher acknowledged the need for environmental education as an ongoing trend rather than a crucial need to educate active citizens. She argued that perhaps this would stop by 2015 when the UK would reassess its need for environmental education, stating:

Extract 4:

*Schools are supposed to be more self-sustaining... I think there's a cut-off point, 2015 I think you're supposed to be... you are supposed to show that a huge percentage of the things that you purchase are sustainably produced and purchased and you have to... I don't know what else they have to do but that is what the Government wants the schools working towards, self-sustainability by I think 2015 they're going to look at them all again.*

### Impact on children

This theme focuses on the impact outdoor education can have on children. The theme identifies four subcategories. Through the FS sessions, the children can experience positive behavioural changes. They can also develop much-needed practical skills and motivate themselves to learn using experience as the method of learning. Moreover, the FS sessions can provide opportunities for personal growth for all children regardless of their academic ability or learning pace.

#### *Positive behavioural changes*

The FSL suggested that outdoor sessions could have a positive impact on pupils' challenging behaviour. She stated:

Extract 21:

*Absolutely, yes... in fact they often get sent out with me... you go out with [blinded] for five minutes and give us a bit of quiet in here! Yes, it is not a problem so as long I have sufficient support that is wholeheartedly agreeing with the children being outside. I mean, I've seen children that are absolute nightmares in the classroom become totally absorbed and easy outside.*

The FS teacher stated that children could behave very differently in the outdoors than how they behave in the indoors. She clarified:

Extract 22:

*Calmer... better observation skills... working together better... higher self-esteem... you know, success, everybody gets success outside... less aggression*

Children who could be troublesome in the class seemed to be affected positively in the outdoors. Programmes such as FS, she stated, have a positive impact on self-confidence and behavioural difficulties.

She also stated that she did not need to raise her voice after switching from an indoor teacher to an FSL and suggested that all schools should run FS as it can have a positive impact on children.

Extract 34:

*I never, ever, ever raise my voice... I never think gosh, that was terrible. The children love learning outdoors... it is so easy to teach outdoors. You know, I don't understand why we don't do more of it, I really, really don't.*

Roe and Aspinall (2011a) also mention behavioural benefits such as children being calmer in outdoor learning sessions when compared to learning indoors. The FSL, when asked whether the outdoor sessions benefited particular pupils, stated that FS can be beneficial for all and it was a learning process that provided benefits that did not discriminate on gender or academic achievement. Specifically, she stated:

Extract 23:

*From this year's experience, I don't think there's a particular group... I really don't... you might think is it a girl, boy thing... I don't think there... we're quite lucky with children this year... I think they've all been equally motivated... they were a mixture of children that were a little bit apprehensive to start with but they've all overcome that now... that was a range of children, so that was girls, that was boys... you know.....?*

#### *Development of practical skills*

The Y4 teacher, however, when asked the same question, said that children who do not do well indoors tended to enjoy and benefit more from an alternative learning process, such as the outdoor sessions. She stated:

Extract 24:

*I think what's nice about a lot of the stuff is that it's accessible to lots of children and particularly with a lot of the outdoors stuff it can appeal particularly to children who learn better in an outdoor environment rather than being in the classroom.*

When asked to elaborate on why that could happen, she answered that the outdoor setting allowed the connection of the student's learning concerning the real world, and she agreed with the FSL, stating that all children who took part benefited from it, no matter their age. Particularly smaller children, she stated, had been quick to adjust to the outdoor setting and had cultivated

several skills related to the outdoors, such as recognising and using tools. Older children, she stated, had benefited from history in the outdoors, using experiential learning in that setting, which helped them make what they learned an experience of their own. Furthermore, she argued that lessons in the outdoors could cultivate self-service skills. She mentioned:

Extract 25:

*All children at all ages get a lot out of it. I would hate to think because the schools that do it really amazingly well and I work at one, I told you they have... reception have all year and I have blocks with each year of six weeks in the afternoon and they have a project like the project that I have just done with year fives by the end of it, they have a list of skills, knowledge and attitude that they have to show they have acquired in a log book at the end. They have to be able to quickly erect a waterproof shelter... quickly and efficiently that when they sit under it and I pour a bucket of water on it, they don't get wet. They have to be able to build a fire and cook something on their own. They have to be able to identify I think half a dozen of the trees that are in here. They have to show me that they can use several tools. They have to show me that they can use a saw properly to make something. That they can use a penknife to whittle something. They have to show me that they can do at least three different knots. They have to understand the phrases Indigenous, native, self-set... you know and for the older children their project was the Romans. So, they had to be able to build a defensive structure by the end of it, properly and learn about when you were an invading force, you had to be able to get the structure up, you had to defend it, you had to be able to go and gather food. So, they have to cook their own food, do you know and that's a great thing to be able to do isn't it?*

The reception teacher, who was also the school's Early Years leader, suggested that the benefits of children who participated in such sessions can be many. She argued that it was a great way for the child to initiate a lesson, it could help in exploration, and the children seemed to enjoy the whole process. Thus outdoor sessions could act as motivation to learn.

When asked about the impact of FS sessions on children, the substitute headteacher mentioned that it could provide the space needed for children to become practical while offering an alternative method of learning that could be particularly beneficial to children who did not do well in class.

Extract 33:

*They want to achieve because they're actually really enjoying being out and having a difference in their environments and feeling that... there's a lot more I suppose a case of it's not so right and wrong when you're outside, it's very experimental, it's very much sort of trial and error and thinking about how you can get somewhere and how you do things and you're not confirmed to a desk and just having to use your brain.*

The FSL also noted that children seemed very intrigued when they were outside. They could find value in experiential learning as they were not confined to a limited space. They also used their whole bodies in contrast to indoors, where they only thought when learning. The FSL also suggested that children who struggled to concentrate in class felt freer when they were outside close to the natural environment. She stated:

Extract 31:

*I think sometimes it's about having space, being able to be practical and get dirty and also, I think it's got real meaning to children. I think sometimes sitting at a desk with a textbook, it's kind of hard to see how that might relate to real life but I think a lot of children, particularly those who struggle to concentrate in the classroom feel a bit more free when they're outside and really relate to plants and animals.*

#### *Experience as motivation to learning*

For the reception teacher, outdoor learning motivated the pupils to learn and apply their knowledge in the real world. It was a way of discovering knowledge. The participants, she claimed, if taken in small groups treated the outdoor sessions like the ones in the indoors. More specifically, she stated:

Extract 26:

*children really kind of seeing the changes over the year, over the seasons changing and we go in without her and we kind of take half the class in small groups all kitted out and we kind of treat it as sometimes... very much as I said in the classroom, we kind of say we have an adult-directed activity and today we wanted to do this and we give them lots of time like we do in reception anyway, we say you can do a child-initiated thing. So, you can go and explore, give them lots of time to just be an explorer and they really enjoy that. They love that where they can just find their own... you know, activities and things... skills they've learnt, they've been taught and they're going to apply that and you can really see that as the year goes on, that that's what they're doing but we're at the very beginning of this cycle that the first reception, you know year group doing this and it will be interesting*

*to see what impact that has next year when they become year one's because they'll still have some workshops and we'll have the next lot of reception children.*

The FSL noted the experiential character of the outdoor sessions and their flexibility in learning various topics. She mentioned that it was a great way to initiate a lesson and gave an example while being interviewed about teaching habitats through the opportunity of a passing butterfly.

Extract 33:

*Well, don't we learn from first-hand experience and immediately? I mean, sitting here this afternoon, you could teach children about seed dispersal because there goes a seed. You could teach children about butterflies, there's an orange tip... look, there's quite a rare butterfly over there, an orange tip. You could teach the children about habitats... what's it on, it's on a stinging nettle... now, that means a million things more to a child than being told that an orange butterfly likes to live on a stinging nettle.*

The Early Years leader agreed with the FSL and stated that the FS experience, as a whole, was a positive experience for all children, independent of their age and learning pace. The reception teacher stated:

Extract 29:

*No, I just think the whole process of this year has been a really positive one, really, really positive... it's been really good to see...go through one year through the kind of seasons of the cycle and it's been really, really good to see the children have kind of taken that on board.*

The reception teacher also noted that it could appeal to children who learned better in the outdoors rather than indoors, while children had the opportunity to work at their own pace. She continued:

Extract 30:

*I think it involves all children... I think children can kind of take it at their own level... it's accessible to lots of children and particularly with a lot of the outdoors stuff it can appeal particularly to children who learn better in an outdoor environment rather than being in the classroom.*

### *Personal growth*

The FSL suggested that outdoor education could offer academic growth to pupils in various ways. It provided opportunities for the children to cultivate their collaboration skills and increase their observational skills. In addition, the FSL suggested that children's knowledge of the world and their understanding of it increased through regular attendance at the FS sessions.

Extract 27:

*All I know is that they want me again. So, I mean, the teachers say to me... you've got to remember I only see them out here and I watch them from week to week become more independent, self-reliant, work together better and I know that those skills are taken with them into the classroom. The class teacher says to me, yes this lot work together better, they have a better understanding of how to cooperate with each other and they say they have better observational skills... even playing out in the yard... in the playground, they are better at looking for small objects, small bugs... small things and they understand the cycle of nature because you know, we're looking at it now in full summer and each week we look at it, you know what's happening this week? What's got taller? What's got smaller? So all those things like growth, all the science they become, it's easy... they do much better at. I mean, I don't know here because I haven't been here that much but one of the schools I work at we actually had to have a Government inspector because some of our results on the children's knowledge and understanding of their world was too good and the inspector said, this is too good for these age groups and then he came with me to a Forest School and said, now I understand and now why it's as good as it is and yes, you can have all these high levels. I think the children's knowledge and understanding of the world will be far superior.*

In more detail, when asked about the impact FS had on the school and its pupils, the FSL stated that the school was keen to continue with the sessions and noted that FS could promote self-reliance skills and peer-to-peer relationships. Furthermore, she argued that it cultivated observational skills, while she reinforced her argument stating that a government inspector indicated that the work in the FS was a significant factor in the school's outstanding status. She also noted the effectiveness in learning this experiential learning could provide.

The thematic analysis indicates possible barriers in the learning process. The teachers suggested that children needed time to adjust to the outdoor learning setting. Moreover, they advocated teacher training in the setting. The teachers also claimed that flexibility in the curriculum was needed for the outdoor sessions to take place. In addition, they suggested that

the learning habits of each child and the child's gender could influence the success of the FS. Furthermore, the teachers suggested some parent involvement in the outdoor sessions and sufficient adult supervision during the FS. Finally, the teachers suggested that proper clothing and equipment were needed for the FS to be successful and that the school needed to embrace a sustainable ethos.

### Questionnaire descriptive statistics: the voices of the parents

The questionnaires had an introduction containing information regarding the researcher, the type of research and the benefits that could result from the research (Appendix 8). The terminology the questionnaire used was such that the researcher believed it would convince the subjects to take part in the research. The syntax used and the scales and total appearance of the research tool tried not to exercise decisive influence on the subjects in order not to affect any of the results that were investigated (see p. 145). Furthermore, the questionnaire was composed of closed questions with an option for the subjects to add responses where they felt that the available options were not complete (Vamvoukas, 2007).

Table 8: How well informed are you regarding environmental education at the school?

Very Informed: 1	4	28.6%
2	8	57.1%
3	1	7.1%
Uninformed: 4	1	7.1%

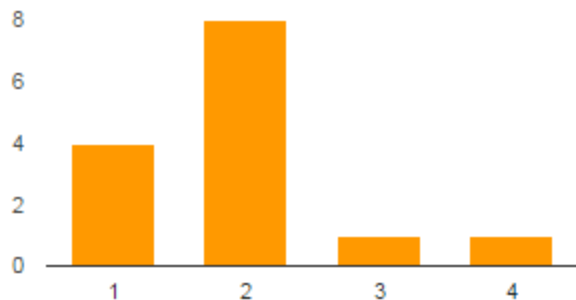


Figure 7: How well informed are you regarding environmental education at school?

Most of the parents (12) felt informed of any environmental educational programmes that run in their children's school, while on the other hand, two of them felt not very informed.

Table 92: Importance of environmental education

Very Important: 1	6	42.9 %
2	3	21.4 %
3	2	14.3 %
Unimportant: 4	3	21.4 %

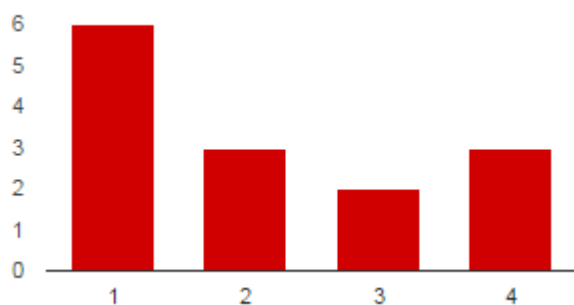


Figure 8: Importance of environmental education

Table 30: Effectiveness of environmental education

Very effective: 1	4	28.6%
2	9	64.3%
3	1	7.1%
Ineffective: 4	0	0%

Nearly half of the parents (9) agreed that environmental education was important for their children's overall education, while five of them did not agree with the statement, without however giving additional information.

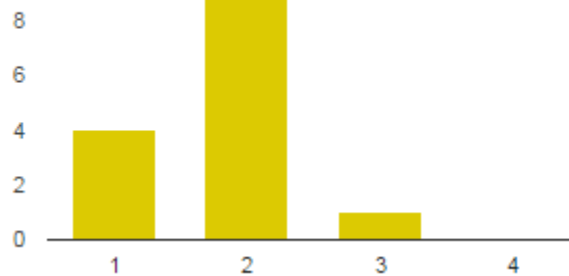


Figure 9: Effectiveness of environmental education

Most of the parents (13) who took part in the survey agreed that environmental education could be effective as a learning tool, while only one of them responded negatively.

Table 11: Can environmental education promote inclusion?

Yes	1	85.7
	2	%
No	2	14.3
		%

Most of the parents (12) believed that environmental education could promote inclusion in schools, while two of them disagreed with the statement, without giving any information about why.

Table 42: Sources of information regarding environmental education

School	12
Television	7
newspapers and magazines	4
Family	13
Internet	4
Friends	5
Other	0

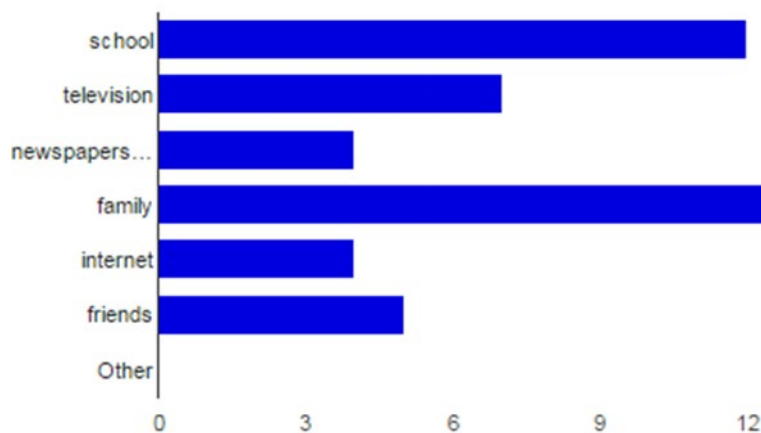


Figure 10: Sources of information regarding environmental education

Notably, in response to a question regarding what parents thought were the most common sources that informed their children about environmental issues, the primary source of information was informal education (i.e., television, newspapers and magazines, internet, family and friends). In particular, the primary source of information, regarding environmental issues for the children, was the family (13). School followed (12) as the second source of information for the children. Television was the next source of information (7). The fifth source was the children's friends (5), while newspapers, magazines and the internet were last (4).

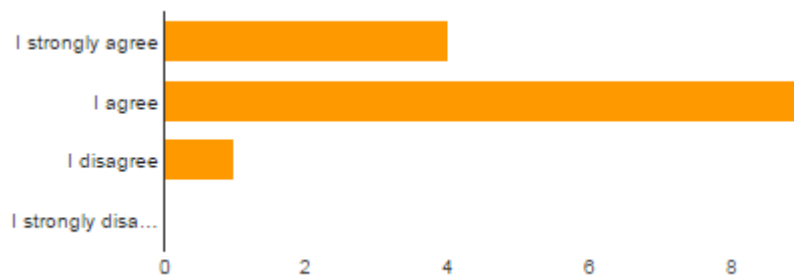


Figure 11: I would rather my child be taught in an outdoor setting.

Most of the parents (92.9%) agreed that they would prefer their children to be taught in an outdoor setting. Only one parent disagreed with the statement. The parent who disagreed stated:

*While environmental education is good, it should certainly not replace traditional education. A mix of the two is good. After all, exams are not going to be held out in the open, so children do need to be trained to cope with traditional environments.*

Table 53: Environmental education can help my child professionally.

I strongly agree	5	35.7%
I agree	6	42.9%
I disagree	2	14.3%
I strongly disagree	1	7.1%

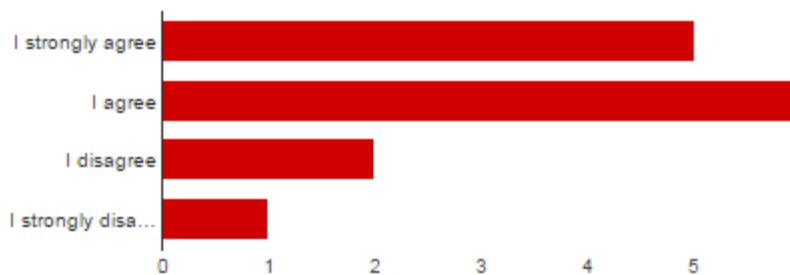


Figure 12: Environmental education can help my child professionally.

Most parents (78.6%) believed that environmental education could help their children develop attributes that would help them professionally in the future. Over one quarter (28.4%) of the parents disagreed with the statement, without giving any further information on the reasons.

Table 64: Outdoor education can be as beneficial as indoor education.

I strongly agree	7	50%
I agree	7	50%
I disagree	0	0%
I strongly disagree	0	0%

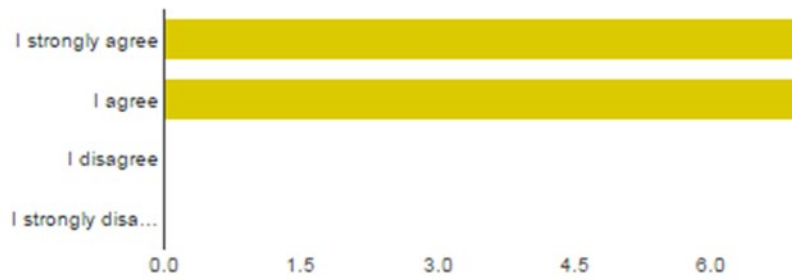


Figure 13: Outdoor education can be as beneficial as indoor education.

All 14 parents who took part in the survey agreed that outdoor education could be as beneficial as indoor education. However, one parent raised concerns about weather conditions, which might be a barrier to outdoor education. She particularly mentioned that:

*The question about outdoor learning presents a choice of either wanting your child to be taught outside or inside which is not really practical. I would like my child to be taught a lot more outside when weather permits, but not outside all the time, e.g., when it's cold.*

Table 75: Environmental education can be directly linked to formal education.

I strongly agree	6	42.9%
I agree	5	35.7%
I disagree	2	14.3%
I strongly disagree	1	7.1%

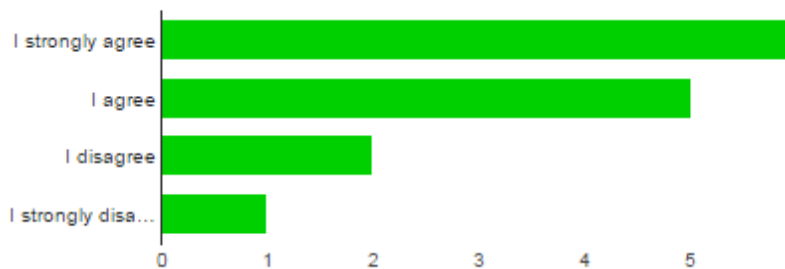


Figure 14: Environmental education can be directly linked to formal education.

According to Figure 14 and Table 14, the majority of respondents either 'strongly agree' or 'agree' with the given statement, accounting for 78.6% of the total responses. On the other

hand, only 21.4% of respondents either 'disagree' or 'strongly disagree' with the statement. This indicates a high level of agreement among the respondents towards the given proposition. In total, 11 parents agreed that environmental education could be directly linked to formal education while only three parents disagreed.

### Open-ended feedback on the questionnaire

One parent linked environmental education and environmental awareness to taxation. Specifically, she mentioned that:

*The frenzy about environmental issues is all about collecting taxes for the CO<sub>2</sub> we produce.*

Another parent generally felt that their child should be taught a lot more outside depending on weather conditions, while another parent was supportive of 'traditional education' as he felt that a traditional education would have a better impact on the child's examination results.

In the free comments section, parents mentioned the benefits of their children's participation in the FS programme. Two main themes emerged from the data the parents gave regarding the benefits of their child participating in the FS sessions. These include benefits to the child and raised environmental awareness. Respectively, these benefits include communication skills, open-mindedness, and the cultivation of skills such as patience, calmness, cooperation, and an increase in environmental awareness. Notably, one parent mentioned that their child 'seemed generally happier but also getting more tired'.

Parents also mention the benefits of environmental awareness: '*Responds better to environmental concerns*', and sustainability: '*He is trying to do small things that could save the planet. Switching off the lights when not needed etc.*', '*he is more interested in recycling materials to help save the planet*' '*they pick up litter, remind me not to waste water and to switch off lights. They are able to tell about the life cycle of different species of plants and animals*' and behavioural changes '*more open-minded and cooperative*'.

Overall, most of the parents were aged from 30 to 49 years, and the vast majority of them attended higher education. Parents seemed to feel well informed regarding any environmental educational programme the school ran, while at the same time, they agreed that environmental education could be important for their child's overall education. All of the parents agreed that as a learning tool, environmental education could have a positive impact on their child's education. In addition, they believed that inclusion in schools could be promoted via environmental education. However, they did not comment further on this statement, even though additional

space was provided in the research tool. In general, parents believed that environmental education could have benefits for their children, including professional, developmental, academic, and behavioural benefits to the child and the promotion of environmental consciousness.

Interestingly, the primary source of information regarding environmental education, as suggested by the parents, was informal education, while formal education was their second choice. Despite this, most of them agreed that environmental education could be linked to formal education. Furthermore, they were generally supportive of environmental education. However, one parent seemed confused about the item itself, as quoted previously. He mentioned:

*While environmental education is good, it should certainly not replace traditional education. A mix of the two is good. After all, exams are not going to be held out in the open, so children do need to be trained to cope with traditional environments.*

This suggests that the parent confused environmental education with outdoor education, leading to the resulting quote, although the question asked was particularly about environmental education. In general, however, and about outdoor education, parents supported the school's outdoor and environmental education. All of them, despite the previous parent who was quoted, mentioned that they would prefer their child to be taught in an outdoor setting. In addition, they found outdoor education as beneficial as indoor education.

Most of the parents suggested that they be informed of environmental education programmes in their children's school. Moreover, the majority of the parents felt that environmental education was important for their children's overall education and claimed that environmental education could be an effective learning tool. The parents claimed that environmental education could promote access to the curriculum for children with differing learning abilities, in formal education. The parents also claimed that the primary sources of information regarding environmental education for their children were the school and the family itself and suggested that environmental education could be directly linked to formal education. In addition, the vast majority of the parents agreed that environmental education could help their children develop professionally. All of the parents agreed that outdoor education could be as beneficial to their children's overall education as indoor education and most of them suggested that they would rather their children learn in an outdoor setting. However, one parent linked learning to traditional formal assessment and disagreed with the above statement. O'Brien and Murray's (2007) findings are in line with the findings from the parents; they argue that FS can provide a vital opportunity for children to become more familiar with natural environments. O'Brien

and Murray (2007) also claim that outdoor education can offer several benefits to children who engage with it. They can improve their confidence, social skills physical skills and their knowledge and understanding of the environment (O'Brien & Murray, 2007).

## Conclusion

The data collection stage started in November 2013 and lasted until May 2015. Most of the parents in this research felt informed of any environmental educational programmes run by their children's school, and the majority of the parents agreed that environmental education was important for their children's education. Almost all the parents who participated in this research agreed that environmental education was effective as a learning approach and that outdoor education could promote inclusion. However, one of the parents suggested that outdoor education should not replace education indoors as '*exams are not going to be held out in the open*'. The most popular sources of information regarding environmental education for children, according to the parents, were their families and their children's school.

The data coming from the LSI informed the study that all children of both Y3 and Y4 without learning difficulties were operating at scores of 4 or 5 indoors and/or in the FS sessions. However, the boy with learning difficulties in Y3 had limited learning experiences in the indoor sessions while his learning was not limited in the outdoor learning sessions. The girl with learning difficulties in Y4 scored 4 in the indoor sessions. Her scores suggest that she did not have limited learning experiences in either the indoor or the outdoor learning sessions. However, the girl in Y4 with learning difficulties scored 5 in the FS sessions that took place outdoors, suggesting that she was most involved in the learning process when learning occurred outdoors.

The interview data emerging from the semi-structured interviews conducted with school staff also informed this research. The main Y4 teacher mentioned that children need time to adjust to learning how to learn outside of the classroom. She suggested that their learning in the outdoors enhanced over time. The substitute teacher in Y4 suggested that the children who needed time to adjust in the outdoors were the ones who did not like to be outside in general and argued that the FS sessions could have long-term positive effects on the children. The information coming from the interviews also suggests that the teaching staff should have training in conducting outdoor education. Moreover, the FSL conducting the FS sessions suggested that there could be gender differences in learning while children learn outside. In particular, she stated that girls seem to complain more about the conditions of the learning setting outdoors. However, she also noted academic positive effects for children who learn outdoors. Outdoor learning acted as a motivation for learning and was characterised by the teachers as a way of discovering knowledge. The

teachers also linked the FS to a flexible way to learn various topics experientially, promoting learning for all children taking part. Lastly, according to the teachers, the outdoor sessions seem to promote parent-school cooperation.

## Chapter 6 Discussion

### Introduction

This chapter relates the findings to current research literature. Furthermore, this chapter discusses the voices of the participants, starting with the children, which were collected through observation. The chapter then continues the discussion, with the voices of the teachers. These interviews were conducted on school grounds and originated from the teaching staff. Lastly, the chapter focuses on the voices of the parents by discussing the findings that come from the questionnaire the parents were invited to fill in.

The voices of the children inform the research on the involvement level of the children in the learning process and compare it to three different settings. The LSI used to capture my impressions of the level of their involvement as the 'voices of the children', measures the involvement of the children in the outdoors during the FS sessions, indoors during classes, and during their playtime. The data coming from the children suggest that the FS was beneficial regarding the involvement of pupils in the learning process to all pupils. In addition, the data from the observations of the children suggest that the FS sessions were particularly beneficial to the involvement of children with SEND.

The interviews capture the opinions of the teaching staff regarding the effect of the FS and the school's ethos and conduct regarding environmental education running at the school. The interviews captured six key themes: 1) the need to conduct more FS sessions, 2) the importance of a flexible curriculum and the habits of learning, 3) the parent's constant presence, 4) the role of equipment needed to conduct the FS sessions, 5) the role of parents' presence throughout the learning process, and 6) gender differences in FS. In more detail, the data emerging from the interviews with the teaching staff suggest that the FS sessions should occur regularly for the FS to be successful. The teachers must also be well-trained to accommodate a more flexible curriculum and habits of learning to promote the inclusion of pupils with SEND.

The questionnaires inform the thesis of what the parents believe regarding outdoor and environmental education and its effect on the children. The observations measure the involvement of the pupils in the three settings in which they were observed: learning indoors, learning outdoors, and during playtime.

The research design adopts the position that different research tools can enrich the data and promote the validity of the findings through triangulation (Denzin, 1978; Burgess, 1984; Marshall & Rossman, 1990; Patton, 1990). Moreover, this chapter discusses the study's findings

concerning previous research in the field of outdoor education and suggests the continued use of outdoor education in formal education. Finally, this chapter summarises the discussion by stating the findings of the study and the contributions of the research.

This research study investigated the belief that outdoor education is considered to be most effective through experiential learning, while the pedagogy of inclusion relates educational and social values to our sense of individual worth. Inclusion, however, remains a controversial concept in education as it relates to educational and social values, and our sense of individual worth (Singh, 2016). Special education is seen, more often, as less of a 'place' and more of a 'range of services', available in every school.

The current curriculum in England suggests time every week for non-curriculum learning opportunities (DfE, 2013). Additionally, in England, schools are urged to encourage child-centred learning approaches (DfE, 2001; Ofsted, 2011; Sammons et al., 2014; Claxton & Carlzon, 2019). FS is a child-led outdoor experience that can act as a fruitful approach to pedagogy (Gill, 2014). However, the field of outdoor education is still under-researched (Gill, 2014). This study advocates that outdoor education can be helpful, especially for pupils who might feel demotivated to take an active role in their learning. This research is also supportive of the claim that outdoor education can provide opportunities for children to enhance their social interactions with peers and adults (Rickinson et al., 2004), opportunities that are essential to the children's cognitive development (Vygotsky, 1978). Through outdoor education, children could benefit emotionally (Kaplan, 1995), socially (Reed, 2005; Moyles, 2010) and cognitively (Vygotsky, 1978; Gardner, 2000).

The main research question this study negotiates is the way outdoor education can facilitate pupils, including pupils with learning difficulties in the specific learning process. This project also focuses on adult stakeholders of the learning process. In particular, this study focuses on answering the following research question:

✚ How can Forest School support inclusive practices?

To achieve this, the study will answer the following sub-questions with a particular interest in children with learning difficulties:

How effective is Forest School in stimulating the involvement of pupils in the learning process?

What are the most common enablers and barriers, teachers and pupils have to deal with when engaging in an outdoor educational programme?

The research focuses on parents and teachers of the children of Y3 and Y4 regarding their stances and perceptions on how effective the learning process within outdoor education is. It also focuses on their thoughts on the most common enablers and barriers teachers and pupils have to deal with when engaging in an environmental education programme.

### Children's involvement

The data emerging from the observational research tool, the LSI, measure the involvement scores of all the children observed in the learning process. The children were not directly asked about their opinions regarding FS. However, the children were observed in three different settings within their school and their involvement in similar activities was measured.

In the current research, a total of ten children, from two classes (Y3 and Y4) were observed. Three boys and two girls from Y3, and three boys and two girls from Y4. One of the girls in Y4 (Y4LDG) has been diagnosed with a global developmental delay while one of the boys in Y3 (Y3LDB) was diagnosed with social communication disorder. The total number of observations was 100. Each observation lasted for two minutes. The scores were analysed independently in each session. Table 11 compares the averages of the scores of those three settings for all ten children by class and setting.

Y4B1 scored 5 in all three settings. Y4B3 scored 5 indoors and outdoors and scored 4 during playtime. Y4G1 scored 5 in all three learning environments. Y4B2 scored five as well in all three learning environments. Y4LDG scored 4 for indoors, 3 for playtime and 5 during the FS sessions. The observations seem to suggest that deep-level learning is likely to occur in both learning environments (indoors and during FS sessions) for all five children (Table 10, Figure 10). When looking at the comparison of averages between Y4 and Y3 children, within the FS setting, it appears that children in Y4 generally scored higher compared to children in Y3 and this could perhaps have to do with the Y4 teachers' stance regarding outdoor education and her actively coordinating environmental education in the school. Notably, this could also have to do with their biological maturity, as the children in Y4 were a year older. By scoring higher, I mean that I judged the child to be more involved in their learning at the time.

The data from the observations suggest that the FS sessions and time outside the classroom, have a positive behavioural impact on all children, adding to Roe and Aspinall (2011a) who suggested that FS can positively influence children with challenging behaviour. This can be perhaps attributed to the school's ethos that focuses on outdoor education and environmental education and that the majority of the teaching staff in the school regarded FS as an opportunity to support modelled activities rather than instructing pupils to complete specific tasks. In addition,

the school's ethos could influence the extent to which the pupils receive coherent messages on where learning is child-led, resulting in an active attitude towards learning, which sets up the conditions for the pupils to build confidence, per Cree's (2011) suggestion, which suggests that success is being experienced through child-led activities in a supportive FS environment (see p. 73). This seems to indicate that activities in the outdoors can significantly reduce exclusion rates of pupils from schools and therefore, should be considered as alternative curriculum activities for a 'balanced curriculum diet' (Gill, 2014) as the UK's exclusion rates from schools have increased (Gordon, 2001). In addition, Reed (2005) argues that the outdoors can improve children's behaviour and motivation to learn.

Indeed this research adopts Reed's (2005) position and suggests that outdoor learning sessions can benefit boys who engage in rough outdoor play by providing a venue for showing care and concern for each other. In addition to Reed's (2005) work, this research indicates benefits for all children both girls and boys but particularly for children who are more vulnerable within the class, such as the children diagnosed with learning difficulties, as the observations that were made indicate that successful learning is more likely to occur for both Y3LDB and Y4LDG outdoors than indoors. Moreover, all of the averages of the scores deriving from the observations made, for both children of Y3 and children of Y4, indicate either equal or higher scores of involvement in the outdoors than the indoors.

To be more specific, Y3G1 scored 4 in all three environments. Y3B1 scored 4 when learning indoors and outdoors while scoring 3 during playtime. Y3G2 scored the same, with 4 indoors, 3 playtime and 4 during the FS sessions. Y3B2 scored 4 indoors, 5 outdoors and 3 during playtime. The theory of social learning (Vygotsky, 1978) suggests that a pupil learns within their zone of proximal development and through peer-to-peer interactions. Hence, social interactions support learning, which, in turn, can be facilitated by the natural environment (O'Brien & Murray, 2007a; 2007b). Y3LDB scored 3 indoors and outdoors and scored 4 during FS. This indicates that deep-level learning (Laevers, 2012) is more likely not to occur for Y3B1, Y3G2, Y3LDB and Y3B2 during the time outdoors. In addition to this, deep-level learning seems to be more difficult for Y3LDB during indoor education (Table 9, Figure 9).

The FS programme was offered to Y3 and Y4 pupils, while parents were also invited to its early sessions. The information coming from the observations suggests that children who had difficulties in indoor learning sessions, in terms of engaging with the learning process, seem to find the FS learning environment more suitable for their individual needs. Therefore, when considering the question 'for whom' FS works (Pawson & Tilley, 1997), it seems that children with

SEND do not need alternative rules or more relaxed ones to benefit from the FS sessions. In fact, during the FS, the FSL did not distinguish between pupils and answered all questions from all children in a similar way. Furthermore, all children experienced the FS sessions without exception and participated in its conduct with high involvement scores.

Differences, however, appeared when looking at all children who attended the programme, a finding that supports that educational 'programmes do not work the same way for everyone' (Bozic & Crossland, 2012, p. 8). Interestingly, all of the girls who were observed from Y3 without the EHC plan scored equally for indoors and outdoors (Y3G1, Y3B1 and Y3G2) while both of the boys of Y3 who were observed, including the boy with the learning difficulty (Y3LDB), scored higher in their involvement in the outdoor sessions compared to the learning sessions indoors. This finding agrees with Gray et al. (2016) and Russel, Gough and Whitehouse (2018), who claimed that girls are more excluded than boys in outdoor and environmental education. This finding is also supported by a teacher as discussed in the next section.

The data emerging from the observations with the children indicate that outdoor learning sessions can have a positive effect on all children. However, the data also suggest that the outdoor learning sessions mainly helped the children who had EHC as both Y3LDB and Y4LDG to be more involved when the learning session was outdoors compared to their involvement scores in the indoor learning sessions. It can also be noted that children with SEND did not need alternative rules or more relaxed ones to benefit from the outdoor learning sessions.

The data coming from the observations suggest that the FS sessions and time outside the classroom have a positive behavioural impact on all children, adding to Roe and Aspinall (2011a) who suggested that FS can positively influence children with challenging behaviour activities outdoors can significantly reduce exclusion rates of pupils from schools and therefore, should be considered as alternative curriculum activities for a balanced curriculum diet, particularly for children who are more vulnerable within the class such as the children diagnosed with learning difficulties, as the observations that were made indicate that successful learning is more likely to occur for both Y3LDB and Y4LDG outdoors than indoors. Social interactions support learning, which in turn, can be facilitated by the natural environment.

It should be noted that to overcome possible bias and also to become more familiar with the observational research tool, I attended several training tutorials with my supervisor. The training took place at Anglia Ruskin University and included a standardisation procedure through the usage of video material of children in various settings. These settings included children playing

outdoors, learning outdoors, and learning indoors. In addition to this, I verified the original scores from the children with the Y3 teacher and the FSL.

### The voices of the teachers

Five teachers were invited to take part in semi-structured interviews. All interviews were conducted on an individual basis. More specifically the teachers were the Y3 teacher, the FSL, the Y4 teacher who was also the eco-coordinator for the school, the deputy head of the school who substituted the Y4 teacher who went on leave in February 2014, the reception teacher, and early year's coordinator.

One of my questions, which I also followed through the semi-structured interview with the FSL of the school, was whether bad weather could be a barrier to learning in the outdoors. Interestingly when asked about the weather's potential to be a disabler of the FS sessions, the teachers did not find weather conditions to be a barrier to outdoor education and justified this, by saying that the children can be dressed appropriately and weather conditions can be predicted; hence outdoor sessions can be planned appropriately. More particularly a teacher claimed that:

*No, they do not make any difference (about weather conditions) if the children are dressed properly, they make no difference at all It was planned like that because you have to seize the moment.*

Nicol et al. (2007) also refer to the positive effects exposure to the weather can have on children. In particular, Nicol et al. (2007) claim that exposure to weather can allow children to feel uninhibited, free and close to nature. Hence exposure to weather can be seen as a valued experience. Following Nicol et al.'s (2007) suggestion, Austin, Knowles and Sayers (2013) also claim that the weather conditions are not considered to be a barrier to conducting FS sessions. The previous researchers in their study claimed that the children embraced bad weather as an opportunity to engage with nature. In addition to the previous, Knight (2011a) also verifies that the conduct of FS is also feasible in bad weather conditions. Knight (2011a) states that a common saying among FSLs is that there is no such thing as bad weather, only bad clothing.

Finally, through the FS experiences, the participants were stimulated to develop socially. Notably, the substitute Y4 teacher mentioned:

*I just think it does have an impact and that we're willing to educate children to know that they are actually important in all of this and I've just been taking the year five class who are starting a campaign to save a national park in Africa from an oil company who wants to drill you know, they're so motivated by it all and they feel the responsibility that*

*everybody should feel and I think because they are the future generation and it's a massive factor for them, we just have to make sure they are all understanding they can do their bit and the impact of it all.*

The teacher seems to adopt Massey's (2004) position that many of the FS tasks require the effort of more than one person and therefore social peer-to-peer relationships are strengthened through the FS sessions. In addition to social interactions, I should note here that the natural outdoor setting provided the FS team with the resources to support their activities (such as trees, branches or earth).

Two key themes emerge from the interviews with the teaching staff. The first is related to enablers and barriers of the outdoor sessions. The enablers and barriers include time for the children to adjust to being in the outdoors, teacher training, flexibility within the curriculum, the learning habits of the pupils involved, gender differences, gear needed to conduct the outdoor learning sessions, sufficient adult supervision, the school's policy, and the presence of the parents to a sufficient degree.

The second theme that emerges from the interviews with the teaching staff relates to the impact FS has on pupils who engage in it. This theme involves positive behavioural changes, the development of personal growth and practical skills, and the role of experience as key to motivating pupils to learn. Both themes that emerge answer, to some extent, the researcher's question regarding the effectiveness of outdoor education to children, while the first answers, to some extent, how the children can access the school's outdoor education curriculum.

The 'need for more' section of this chapter indicates that FS should occur on a scheduled and regular basis for this approach to learning, to be effective. The 'flexible curriculum and the habits of learning' section informs the research that the teachers involved in the outdoor learning sessions should be qualified to do so and have been trained in FS. The 'constant parents' presence' section of the chapter informs the research of the critical role the parents' stance can play in the effectiveness of the learning sessions.

Interestingly, teachers view the constant parent presence as a barrier to the effectiveness of the FS; they seem to suggest moderate parent involvement in the learning sessions. Despite this, teachers value the environmental ethos the parents of the school seem to have adopted and support the fact that parents view this feature of the school as a positive factor of the school's policy. The topic regarding 'the ethos of the school' discusses the investments the school made in practical matters and the transferable peer-to-peer relationships that were built during the FS

sessions. These factors seem to allow the FS sessions to continue more easily with consistency and perseverance. The topic regarding 'gender' emerges from the interviews as well. This section in this chapter informs the research of past tendencies on the topic of 'gender' in outdoor education and illustrates the belief that women are unrepresented in outdoor education leadership positions. This research, however, notes that most of the teaching personnel including the headteacher and the FSL were women. Moreover, the majority of the parents who attended the FS sessions were women as well. Despite this, however, most pupils who seem to have benefited the most from the FS sessions are boys.

### The need for more

The first theme that comes out of the interviews relates to possible barriers that might obstruct the learning experience. The reception teacher considered herself to be more flexible to engage in outdoor activities given the fact that the curriculum in the early years is not as flexible as in Key Stage 2 (KS2). In particular, the reception teacher stated that: *'we've become very involved in that and because our curriculum is a little bit freer, not so tight'*. The reception teacher's viewpoint was also adopted by the FSL who said that *'Time within a very crowded curriculum to actually spend the time outside'*. The FSL, and the reception teacher, both consider time to be an obstacle in two ways. First, the teachers suggest that the curriculum seems to be too 'tight' and does not allow enough time for children to spend outside the classroom, hence rendering the curriculum less capable of being flexible to outdoor learning experiences.

The FS sessions occurred once a week for the whole year, following FS practice (FSA, 2013), in contrast to other outdoor educational programmes, the majority of which are short-lived (FSA, 2013). Notably, Kellert and Wilson (1993) suggested that prolonged contact with the natural environment scheduled on a long-term basis excites the participants but can also have a restorative effect on them (Kaplan, 1995). Kaplan (1995) had previously suggested that 'getting away' (1995, p. 174) from the urban context can provide the opportunity for someone to rest their fatigued attention. Furthermore, he suggests that nature can fascinate the ones who experience it effortlessly. Furthermore, the natural environment is a setting where humans can feel at ease as nature is experienced there as high incompatibility. Beaglehole (1967) also reported the idea that humans interact and function within nature with less effort than in more 'civilised' settings. The present study finds that the time spent outdoors needs to be planned and scheduled for the learning sessions to be more successful for pupils to become more involved in the learning process.

The Y4 substitute teacher also stated that many children need time to adjust to being outside and get used to it. When asked about children who seem less motivated in either environmental education or outdoor learning, she stated that:

*I don't think anyone's less motivated in the environmental theme but there are some children who just don't like being dirty and being outside. I think the children here have all had different amounts of experience of being outside and those who haven't spent a lot of time being outside it takes a while to adjust but from speaking to the Forest School leader once they've got used to it and they've overcome getting dirty and they absolutely love it and try.*

This study indicates that the FS sessions should occur regularly for the FS to be successful; thus, a key finding of this study is the factor that regularity of the outdoor sessions, is an enabler to learning in outdoor education. What the FSL and the Y4 substitute teacher stated agrees with Swarbrick et al.'s (2004) definition of FS, which implies that the FS sessions should allow children to spend regular and planned time in an outdoor natural environment. The FS run at the school regularly allowed the school to provide experiential learning opportunities to its pupils although this learning approach is not a mandatory requirement of the current national curriculum (DfE, 2013). Still, it has drawn from top-performing countries, in which the curriculum includes regular experiential learning, such as Denmark (OFSTED, 2003; 2015).

#### **A flexible curriculum and the habits of learning**

Children also need time to adjust when they are outside of the classroom. '*Time within a very crowded curriculum to actually spend the time outside*', the Y3 teacher continued.

The substitute for the Y3 teacher claimed that the teaching staff's inexperience when teaching outside could be the biggest obstacle to conducting learning sessions outdoors. She mentioned that teaching outdoors required more flexibility on behalf of the teacher than teaching indoors and as such outdoor teaching staff should be appropriately trained to readjust their lesson plans quickly if needed and to grasp the opportunity to teach the children outdoors when the curriculum allows for such activities. In particular, she claimed that:

*the biggest barrier is to ordinary teachers doing it is lack of experience and lack of flexibility that when conditions aren't perfect, you've got to rethink what you're going to do. You know, it's no good wanting to do say environmental art when it's pouring with rain, you've got to think about something else... teachers being educated in it so that the teachers can*

*actually feel confident that they could do all these things in the areas of the curriculum you can take outside.*

The teachers worked in a school that embraced both outdoor education and environmental education and gradually became more familiar with the FS context, so they could be stimulated to reflect upon their stances on Kolb's (1984) experiential learning. Maynard (2007b) suggests that some teachers might find it difficult to step back from instructing the learners. In the case of the FS sessions, however, this study finds that the FSL adopted the school's learner-centred ethos and the FS was successful, even for some of the learners with SEND, as the senior teaching staff supported the FSL who runs the FS autonomously.

The FSL teacher backed up the Y3 substitute teacher's claim regarding the need for teacher training, by mentioning that children's behaviour is more difficult to control since the children are not confined within a classroom '*there aren't the four walls of the class, and the children have got a lot more freedom*'. However, during our discussion, she contradicted that statement because she agreed that children find the outdoor environment more motivating '*I think it involves all children... I think children can kind of take it at their level*' and hence they are more likely to behave better and focus on the task '*when children are more motivated, they are more likely to stay on task, and you find that they do behave better in that situation*', she continued. When asked about who tends to find FS more enjoyable she stated:

*Children that don't get success in the classroom... whose skills are not recognised as important within the ordinary classroom activity often shine outside. A lot of children find the confines... physical confines of a classroom very difficult to cope with. I mean, it's not natural, is it? You don't share your bedroom with 15 other people do you and that's the bottom line.*

It becomes apparent that children need time to adjust to being outdoors.

Moreover, this theme recognises the need for practically skilled and trained FS staff that are needed to conduct the FS sessions: staff who are motivated to embrace children with vulnerabilities and cultivate positive relationships with them. Also, FS practice is not for everyone. However, children who react positively to the school's natural environment can enjoy positive outcomes from the FS sessions.

### The ethos of the school

The findings from the observation agree with the findings of the interviews and suggest that the attention of the learners was easily stimulated by the natural environment of the FS

sessions in agreement with previous research (Herzog et al., 1997). The children seem to have gained the experience of being in the same conditions as others as a group culture was developed during the FS sessions. The school's ethos embraces FS, which by nature focuses on learner-led activities. FS teaching staff are facilitators instead of instructors, a practice that is thought to constitute active learning (Maynard & Waters, 2007; Bilton, 2010). Within the outdoor activities of an FS, the children were not rushed to move to different tasks and had the time to consider, observe, and reflect on their projects (Maynard, 2007a; Knight, 2011b).

Teachers also stated that some children feel confined indoors and those children's skills are not recognised as necessary within an ordinary classroom activity. They mentioned that those children often do noticeably better when they are outdoors. The acknowledgement by peers for example, of a student's physical strength, while outside, altered the social hierarchy while participating in the FS sessions. Additionally, as the experiences offered in the FS offered opportunities for social development, communication between the group and teamwork, many opportunities occurred for individual members of the group to show leadership skills. The relationships between the groups formed within the FS sessions seem to reduce social conflict, a finding that also seemed, while observing the children indoors, to transfer back to the classroom.

Moreover, while outdoors, children also had the opportunity in many cases to listen carefully to adults when that was needed (for example, to take responsibility and handle and use tools and equipment that could be harmful). The views of the staff responsible for the outdoor sessions agreed with Roe and Aspinall (2011a) who suggested that children's behaviour was calmer during the FS in comparison to traditional indoor learning. However, Roe and Aspinall's (2011a) research was based on measurements taken on four 'snapshots' pre- and post-FS days, limiting thus the validity of their findings. Despite this, Roe and Aspinall's (2011a) research is one of the few studies that have focused on children in primary schools diagnosed with SEND, and the way these children access FS sessions. Roe and Aspinall's (2011a) research investigated restoration aspects for children 11 years old. The current research uses a case study focusing on children of 7 and 8 years old. In addition to this, the current research also uses parents and teachers to capture a broader image of the learning context.

### Constant parents' presence

The distinct perspectives of the parents regarding their child's learning and teaching can provide opportunities to both teachers and themselves (HMIE, 2009, Dennis et al., 2014). When teachers involve parents in the learning process, they can discover and share their views to help the parents support the learning of their children.

Interestingly, one teacher mentioned the constant presence of a parent during the outdoor sessions to be a possible barrier to learning. In particular, the FSL teacher stated:

*What I say to parents though is come along for a block of sessions, say four or five and then go away because quite often... all they do is hang on to mummy... and they don't learn because they're too busy being proud of their mummy.*

The reception teacher said that space in urban schools could be a possible barrier to adopting an outdoor learning session since not all inner-city schools can have the appropriate space required. She stated that *'we're quite privileged for an inner-city school to have space and things like that, you know not all inner-city schools have spaces like this'*. That teacher also mentioned, as a disabler in the eyes of some parents, a feeling of futility where one alone cannot make an actual change for the environment. She said:

*I just think it's vital, but I just see so many adults that behave so appallingly when it comes to the environment and who have a real attitude of, well there's nothing I can do about it, I'm just one person you know, I'm not the one making a difference.*

However, she also said that, in this school, outdoor sessions and environmental education are boosted by the fact that most parents are supportive of environmental awareness and consider it as a particular feature of the school because the head of the school actively promotes outdoor sessions and claimed that *'...the parents of this school are very much... they all sort of hold the same environmental ethos, which other schools might not have so much but parents here are very supportive of it'*. She continued defending her argument that *'the headteacher has got to be really behind... new parents because they really see it as a real feature of the school: that is something that we do.'*

Apart from the opportunity parents have to work with professionals and involve themselves in the learning process of their children, Bento and Dias (2017) suggest that they should participate as much as possible in outdoor learning sessions for some reasons. In particular, Bento and Dias (2017) claim that parents can offer their skills to set up and build structures for their children to use. Moreover, they suggest that they can overcome reasonable fears related to their children progressively with guidance from professionals working with children. Finally, they can integrate outdoor experiences with their children into the family routine and thus create stronger positive effects on their children's development (Bento & Dias, 2017).

## Gender

The FSL suggests a gender difference in the way children adjust and behave towards outdoor sessions when she says: *'Some of my girls, after a while start to moan that they're cold or they don't like to get muddy or wet or things'*, and when talking about a previous FS experience she was aware of, she also mentioned:

*Yeah... it was a man and he used to take groups of boys out into the forest area and they would build things together... we found that really helped the issues that they were having kind of at lunchtimes and break times when they were fighting and arguing and things like that, where they actually had to work together, and they really enjoyed doing it, so they knew they had to behave to be able to do it, but it had a real good impact.*

Gender differences in outdoor education have been a significant area of study, with early literature from the 1960s and 1970s focusing predominantly on outdoor education for boys. This trend saw a shift in the 1980s and notably in the 1990s, when an increasing number of publications, authored mainly by women, began exploring female experiences in outdoor settings, both in single-sex and mixed-sex contexts (Neil, 1997; Gray, Allen-Craig & Carpenter, 2016). Since the 1990s, the presence of women in outdoor education roles has continued to grow, reaching a notable high by 1996 (Gray et al., 2016). Recent research by Rizzolo et al. (2023) not only underscores this trend but also highlights that, in their study, all FS session teachers, including the FSL, were women. This evolving representation reflects broader shifts in the field toward greater gender diversity and inclusion, aligning with the increased acknowledgement of women's roles and experiences in outdoor education. Gray et al. (2017) claim that the outdoor education field is still underrepresented by women working in outdoor education leadership positions. Gray (2016) mentions a false sense of complacency since the 1990s, in addition to feminist fatigue, might have led to a decline in perseverance for changes that would lead to parity.

As the current case study is only focused on one particular school with a limited staff, this study does not oppose Gray's (2016) or Rizzolo et al.'s (2023) claims. All of the teachers who worked in the school where this research took place, including the head of the school, were women. Furthermore, on the one hand, all of the parents who attended the FS sessions sporadically were women as well. On the other hand, it should also be noted that the pupils who seem to have benefited the most from the outdoor learning sessions when looking at their involvement scores, seem to be the boys. Hence, this study does not eliminate gender differences concerning pupils when conducting outdoor learning sessions.

## The voices of the parents

The parents who were invited to take part in the research and filled in the survey are parents of the Y3 and Y4 children. The participants were invited to take part in a survey consisting of closed questions (Yes/No) or give input to a hierarchical Likert Scale consisting of four answers (I strongly agree, I agree, I disagree, I strongly disagree). The survey also included two open questions asking for feedback and noticeable behavioural changes in their children after the FS program, and demographical questions regarding participants' age, educational status, and sources of information regarding environmental education, outdoor education and the FS sessions their children participate in. None of the participants gave a different answer than the predetermined sets of responses. The quantitative aspect of the study was implemented after Roe and Aspinall's (2011a) adoption of the claim that research that can quantitatively compare the behaviour of pupils with difficulties can be helpful to expand and illuminate the potential that outdoor education can provide a restorative effect. I also felt that quantitatively supported research might explore the extent to which benefits deriving from the sessions of an FS, can be transferred in other settings. In particular, most of the parents were very informed regarding the environmental programmes in their children's school. They seem to suggest that the outdoor education focus in the school can be fruitful in inclusion practices while there seems to be an interactive relationship between the children and their families. The parents suggested that the primary source for the information they had regarding sustainability was talks between the family and the children.

In total, 14 parents filled in the questionnaire, and when asked, the vast majority accepted that environmental education could promote inclusion (Table 11). However, some concerns were raised in the feedback question.

The parents seemed very informed regarding environmental education programmes that run in their children's school (Figure 6; Table 8). In fact, on a few occasions, in particular, at the beginning of the FS sessions, several parents attended the outdoor learning sessions. Moreover, during frequent parent and teacher meetings, the parents were informed of the school's learning approaches. Consistently, the vast majority of the parents who answered the survey consider environmental education to be essential and useful for their child's overall education (Figure 7; Figure 8). They explained that family and school are the two primary sources of information regarding environmental concerns. As highlighted in Table 12, informal education seems to be the primary source of information for their children about the environment. In particular, parents include television, newspapers and magazines, the internet and discussions with friends and

family in this (Figure 9). However, most of them stated that environmental education could be directly linked to formal education (Figure 13, Table 15). This could suggest that parents can view changes in the curriculum regarding environmental education positively.

The majority of the parents who had children participating in the FS sessions both of Y4 and Y3 seemed to suggest that the FS sessions supported their children's independence. Some of them suggested that they became aware of the positive effects of the environment. Similar findings are also found in previous research: O'Brien and Murray (2007) for example, claimed that FS could provide an essential opportunity for the children who participate in them to explore and become familiar with woodlands and improve their confidence, social skills, motivation and concentration, their physical skills their knowledge and understanding and their language and communication skills.

When asked about environmental education being able to help their child professionally in the future (Table 13; Figure 11), almost all of the parents stated that environmental education could cultivate professional skills and help their child develop professional skills. The parents stated that after the FS sessions (Q9), their children increased their awareness towards environmental issues: *'Responds better to environmental concerns'* and promote sustainability: *'He is trying to do small things that could save the planet. Switching off the lights when not needed etc.'*, *'he is more interested in recycling materials to help save the planet'*, and *'they pick up litter, remind me not to waste water and to switch off lights. They can tell about the life cycle of different species of plants and animals'*. They also report a positive impact on communication skills, open-mindedness, and behaviour such as calmness, patience and cooperation: *'more open-minded and cooperative'*. However, one parent mentioned that their child seemed generally happier but was getting more tired. While most of the parents agreed that they would prefer for their children to learn indoors rather than outdoors, a concern was raised (Figure 10) regarding the effectiveness of outdoor education in academic skills linked to exams. Cultural norms throughout the UK that are related to education and physical activity are still rooted in Victorian values (Leather, 2018), and the concern raised by the teacher may reflect this.

### Bringing the voices together

The present study emphasises the importance of bringing together different voices and perspectives to enhance our understanding of outdoor education and FS programmes. This approach aligns with the broader literature that highlights the value of collaboration and partnerships in promoting effective and sustainable educational practices (Miller et al., 2019; Ozer & Douglas, 2020; Waite & Telford, 2021a; 2021b).

By engaging with parents, teachers, and other stakeholders, the study creates a platform for dialogue and knowledge exchange, which can inform the development of more inclusive and responsive educational programmes. This aligns with the principles of participatory action research, which emphasises the importance of collaboration and empowerment in research and practice (Creswell & Plano Clark, 2018; Reason & Bradbury, 2008).

Moreover, the study demonstrates the potential of digital technologies to facilitate communication and collaboration among different stakeholders. The use of online surveys and video conferencing tools enabled the researchers to engage with a diverse range of participants, including those who may not have been able to participate in traditional face-to-face meetings (Bergold & Thomas, 2012; Clark & Moss, 2011).

Furthermore, the study highlights the role of reflexivity in research and practice. The researchers' ongoing reflection and self-evaluation allowed them to identify and address their biases and assumptions, and to continually refine their research questions and methodologies (Finlay, 2002; Rolfe et al., 2016).

Overall, this study underscores the value of bringing together different voices and perspectives to inform educational practice and research. By embracing collaboration, participation, and reflexivity, we can develop more responsive and effective educational programmes that meet the diverse needs of learners in today's complex and rapidly changing world. These findings have important implications for educational policy and practice and can inform the development of more innovative and inclusive educational programmes.

The findings of the present study are being triangulated with the help of the table below.

Table 16: Triangulation of findings

Source Data	of Data Method	Collection	Data Analysis Method	Findings
Parents' Responses	Self-administered questionnaire		Descriptive statistics	Most parents feel informed about environmental education at school, believe it is important and effective, and can promote inclusion. The primary source of information for children about environmental issues is informal education from family, friends, and media. Most parents prefer outdoor education and believe it can be as beneficial as indoor education. They also believe that environmental education can help their children professionally and can be directly linked to formal education.
Researcher Observations	Direct observation of the school environment and curriculum		Field notes, LSI	The school has several environmental education programmes and initiatives, such as recycling and energy conservation. Outdoor education is also incorporated into the curriculum through nature walks, field trips and the regular FS. FS promotes the involvement of all students in the learning process particularly those with SEND.
Practitioners' responses	Interviews with teachers and school administrators		Thematic analysis	Teachers and school administrators confirm the importance of outdoor education and its positive impact on students. They also note challenges, such as limited resources and the need for more professional development for teachers in this area.

Overall, the table demonstrates how the findings of the study relate to the research question and the research methods used. The table also shows how the findings are supported by the data collected through interviews, surveys, and observations.

The findings from this research triangulate to provide a comprehensive understanding of how children engage in the FS context and the generative conditions that support their

engagement and learning. The LSI observations highlighted the importance of play and exploration in supporting children's engagement and learning, while the teacher interviews and parent questionnaires emphasised the role of child-led learning, risk-taking, and positive relationships with nature and others.

Recent literature supports the importance of child-led learning and opportunities for risk-taking in the development and learning of children (Borret, 2023). Additionally, the benefits of nature-based learning, such as those provided by the FS context, have been documented in numerous studies (Waite et al., 2017). The findings of this research support these claims and highlight the importance of such conditions for children with SEND.

The triangulation of data from the observation, teacher interviews, and parent questionnaires provides a comprehensive understanding of children's engagement and learning in the FS context (Table 2). The findings indicate that children were highly engaged in FS activities, particularly in play and exploration, which supported their development and learning. This aligns with recent literature that emphasises the importance of play and child-led learning in supporting children's development and learning (Ginsburg, 2007; Whitebread et al., 2012). FS promotes environmental awareness and sustainability education in several ways. Firstly, FS offers an opportunity for children to connect with nature and engage in hands-on learning experiences that promote environmental awareness. Through activities such as exploring the natural environment, identifying plants and animals, and learning about ecosystems and the natural world, children develop a deeper understanding and appreciation for the environment. Furthermore, FS provides a unique learning environment that is conducive to developing critical thinking skills and problem-solving abilities related to environmental issues. Children are encouraged to ask questions and explore topics related to the environment, such as climate change, biodiversity loss, and pollution, which promotes a deeper understanding of the complex issues facing the planet and encourages proactive engagement in finding solutions (Table 2).

Overall, FS provides a rich and immersive learning environment that promotes environmental awareness, fosters a sense of responsibility towards the environment, and encourages critical thinking and problem-solving related to environmental issues.

The triangulation of the findings using all three research tools has provided a robust understanding of how children engage in the FS context and the generative conditions that support their engagement and learning, particularly for those with SEND. These findings have

important implications for education and highlight the potential of nature-based learning and child-led approaches for promoting positive developmental outcomes in children.

The present research took place in a mainstream school that used FS as a pedagogical approach. As aforementioned, FS uses a child-led focus on learning where the participants can experience the ever-changing natural world and discover its potential challenges (Knight, 2011a). The FS sessions were regularly planned by a trained FS teacher. All pupils of the school participated in the FS sessions. However, this research focused on pupils from Y3 and Y4 to shed light on an under-researched age group. By using the FS approach, the school allowed the students to experience learning in a natural environment. Data emerging from the observational tool suggest that during these sessions, the pupils formed relationships amongst themselves, with their teachers and with their environment. In more detail, the child with autism seemed keener to cooperate with his peers when in the outdoors to engage in group tasks such as building a hut for his team. The findings of the present research suggest that through the FS sessions, the pupils experienced learning within the outdoor school grounds. In addition, the teachers claimed that during these sessions, the pupils formed relationships amongst themselves, with their teachers and with their environment. This claim is also supported by the observational data of the research.

Overall, parents believe that they are well informed regarding the environmental education programmes that take place in their children's school. Also, they suggest that environmental education is essential for their children's overall education, but they seem to prioritise discussions taking place at home, through the family, as the primary source of information regarding environmental education. Formal education is the second source of information regarding environmental education. Moreover, parents agree that environmental education is effective as a learning tool. Parents suggest that outdoor education is as effective as indoor education. The findings of the survey also suggest that the parents think that environmental education can promote the inclusion of SEND pupils in the school. Parents also consider outdoor education as a useful learning tool for children. In particular, they state that outdoor education can be as effective as indoor education.

Moreover, they acknowledge that environmental education can help children develop attributes that could support them professionally in the future. Parents suggest that behavioural benefits from outdoor education can include patience, calmness and cooperative skills. In the open-ended questions, parents also noted that outdoor education could increase their children's environmental awareness.

The observations suggest that all children seem to be most involved in the outdoor setting. Most of the children attending Y3 and Y4 had deep-level involvement during the lessons indoors and outdoors as well. Overall, however, the children were most involved in the learning process when they were outdoors. In particular, the boy in Y3 with learning difficulties only had deep-level involvement in the outdoor setting. Similarly, the girl in Y4 had a deeper level of involvement in the outdoor learning setting when compared to her involvement score in the indoor learning sessions. It appears that the children had better access to the curriculum in the outdoor setting and therefore they were more involved in the learning process there.

The teachers suggest that outdoor education can offer positive behavioural changes to children, following the parents who suggested similar attributes to outdoor education. The teachers also inform the research that the experiential FS approach can stimulate learning as it motivates the children to learn. However, for the FS to be successful, the teachers acknowledge several enablers of the process. Notably, parents also note that outdoor education can promote inclusion. This overall finding, found across all research tools, could explain to some extent why children who were observed to be less involved during the indoor sessions were more involved in the outdoors.

The LSI indicated higher levels of involvement of the two pupils with SEND when they were learning in the outdoor setting. The survey conducted with the parents confirmed that outdoor education could promote inclusion. Moreover, the parents suggested that environmental education can promote environmental awareness that could, in turn, promote sustainability. Through the interviews, the research investigated the enabling factors that could occur through FS. According to the teachers, the school needs to embrace the environmental ethos and adopt policies towards sustainability. Furthermore, time for the children to adjust and flexibility in the curriculum is required for the FS to be successful.

Moreover, the teachers suggest that the children should have the proper gear and sufficient equipment to take part in the outdoor learning setting. Adding to this, the teachers suggest that the learning habits of the children play a role in whether the FS would appeal to the children and that sufficient adult supervision is required. Furthermore, the teachers seem to value training for staff for them to conduct outdoor education.

The present research understands inclusion as enabling pupils with SEND to access the same curriculum as their peers in mainstream educational settings. Hence, this research adopts

the position that pupils with SEND should enjoy the same levels of access to the curriculum as their peers in school and promote their active participation in the learning process.

This research also suggests that all children, including children with SEND, had access to the curriculum to some extent, as the LSI tool suggested moderate engagement across settings. However, children with SEND seemed to enjoy higher access to the curriculum when they were being taught outdoors in the FS sessions, as their involvement scores were higher in the outdoor sessions when compared to their scores in the indoor sessions. Hence, FS with its differentiated learning environment can accommodate diversity across pupils. Furthermore, this research identifies appropriate and sufficient equipment as an additional enabler for the FS (see Figure 14). When all children have access to appropriate equipment in the school setting, the teachers can seize the opportunity to engage with nature whenever suitable weather occurs, adding a valued experience in the educational setting. Another enabler of the FS mechanism is appropriate FS training for the school staff. Teachers might find it difficult to step back from leading the learning session as they are used to in indoor teaching. Perhaps, as the FSL suggested, with appropriate training in FS learning sessions teachers could fully embrace a learner-centred ethos that was shared with the senior teaching staff and the FSL. Moreover, the current research identifies as an additional enabler of the FS mechanism the sufficient presence of the parents in the FS learning process. This presence can act beneficially for the children as parents can inform and support the learning of their children. However, the presence of the parents should be limited (see p. 207) in the first FS sessions as the constant presence of the parents has been identified to act as a barrier in the learning process. Therefore, this research suggests sufficient parents' involvement in the learning process, limited to the first session of the FS.

This research envisions that children, particularly children with SEND, through active participation in the learning process, will benefit not only from subject-related learning but also from transformative learning that can create more empowered individuals. The FS can offer a high level of involvement to pupils with SEND and thus it can facilitate inclusive learning. Therefore, FS can serve educational settings as a model for inclusive practice. When pupils with disabilities have the opportunity to enjoy deep-level learning just like their peers, they are involved in and achieve in the learning setting. Hence, they have access to the curriculum.

As the parents of the pupils, seem to suggest that their children actively seek access to the natural environment to spend time in it, this research is supportive of Ridges, Knowles and Sayers's (2012) claim that the outdoor environment 'tests children's competencies, enables them to manage their perceptions of risk, and helps their creativity, observation and motor skills' (2012,

p. 60). The authors enriched the validity of their findings by inter-rater reliability checks. However, the current study triangulates the information using teachers and parents. This research design also drew from Murray et al. (2003) who gathered information from FSLs to report an evaluation of how FS works. His findings suggested several benefits of FS to children.

Notably, discussions on inclusive practice in school settings provided a forum for the development of a culture of inclusion of students with difficulties within schools across Europe (Bartolo, 2010). Inclusion is a much-debated concept (Vlachou et al., 2016; Harris, 2018, Ainscow, 2012) in terms of its meaning, use and understanding in educational settings. UNESCO (2009b) identifies inclusion as 'an ongoing process' that aims to offer quality education for all students, while simultaneously, inclusion respects the diversity and the different cultural, academic and social backgrounds of every student. At the same time, an inclusive education ought to respect the various learning expectations of the students while giving access to the curriculum to all. According to the United Nations, inclusion should eliminate all forms of discrimination in schools (UNESCO, 2009b). The UN's definition of inclusion in educational settings was enriched with the principles of equity, social justice and participation (Essex et al., 2019). On the other hand, inclusion was linked to equity so that 'all individuals reach at least a basic minimum of skills' (OECD, 2013 p.15). Kyriacou (2013) suggest that for many teachers, inclusion is addressed as a narrower concept. This is because the concept of inclusion for most teachers in schools is limited to a way of including pupils with SEND within mainstream classrooms without giving much attention to the necessary conditions for the successful inclusion of such pupils into the life of the school (Kyriacou, 2013). Further critical academic research by Raffo and Gunter (2008) advocates in favour of inclusion as inclusion has the potential to rearrange social inputs. Raffo and Gunter (2008) view schools as institutions that can mediate social inequalities so that all pupils, particularly the more vulnerable pupils, can benefit. Common ground between the perspectives regarding inclusion seems to be inclusive approaches. Inclusion seems to promote education for all students by addressing improvements within educational settings.

This study views inclusion as a means to facilitate pupils with SEND to access the same curriculum as their mainstream peers in educational settings. The research asserts that pupils with SEND should have an equitable opportunity to participate actively in the learning process. However, it was observed that pupils with SEND had greater access to the curriculum during FS sessions conducted in outdoor settings. The differentiated FS learning environment could cater to the diverse learning needs of all pupils, including those with SEND. Additionally, FS demonstrated the potential to elicit positive behavioural changes in children. Furthermore, the

experiential approach of the FS could foster student engagement in the learning process. This study, however, identifies certain requirements for FS to be successful in providing inclusive learning and desired access to the curriculum for pupils with SEND. Outdoor education and FS have become increasingly popular in recent years, with schools and educators recognising the benefits of taking learning outside of the classroom.

The present research aimed to investigate the stances of parents and teachers on outdoor education and FS. The findings of this study align with recent literature on the topic, highlighting the positive impact of outdoor education on students and the importance of regular and scheduled outdoor sessions. This research found that weather conditions were not a barrier to outdoor education, with teachers believing that children can be dressed appropriately and weather conditions can be predicted. This is consistent with recent literature that has found that outdoor learning in all weathers can have a positive impact on children's learning and well-being (Harris, 2021). Exposure to the natural environment has been linked to improvements in physical health, mental well-being, and academic achievement (Cudworth & Lumber, 2021). Teachers in the present research believed that exposure to weather can allow children to feel uninhibited, free and close to nature, which is supported by the literature on the benefits of nature-based experiences on children's emotional and social development (Storli & Sandseter, 2021). The research identified two key themes, enablers and barriers of the outdoor sessions, and the impact FS has on pupils who engage in it. The first theme includes factors such as teacher training, flexibility within the curriculum, gear needed, and sufficient adult supervision. These findings align with recent literature that has identified teacher training as a key enabler for successful outdoor education programmes (Garden & Downes, 2023). Teachers need to have the skills and confidence to facilitate learning outside the classroom, and ongoing professional development is important to ensure that they are equipped to do so. Flexibility within the curriculum is also important, as outdoor education can offer opportunities for cross-curricular learning that may not be possible in the classroom.

The second theme relates to the positive impact of FS on students' behavioural changes, personal growth, and practical skills. This finding is supported by recent literature that has found that nature-based programmes, such as FS, can promote social and emotional development, resilience, and self-regulation skills (Liefländer et al., 2015). These programmes can also provide opportunities for children to develop practical skills such as problem-solving, communication, and teamwork. The role of experience in motivating pupils to learn is also highlighted in the literature,

with research suggesting that hands-on and experiential learning can improve engagement and academic achievement (Knight 2011a).

The study by Garden and Downes (2023) suggests that for FS programmes to be effective, they need to be conducted regularly and on a scheduled basis. This aligns with current research indicating that consistent and prolonged engagement with nature-based programmes significantly enhances children's well-being and academic success, compared to sporadic or single-session exposures. Regular outdoor learning can also provide opportunities for children to develop a deeper connection to the natural environment and to develop a sense of stewardship for the natural world.

Finally, the study found that constant parent presence during FS sessions can be a barrier to the effectiveness of the programme. This finding is consistent with recent literature that has highlighted the importance of finding a balance between parental involvement and allowing children to have independent and autonomous experiences in nature (Chawla, 2015). While parental involvement can be beneficial in terms of promoting family engagement with nature and supporting children's learning, opportunities for children to take risks, make their own decisions, and develop a sense of agency in nature-based experiences must be ensured.

### [Links of the present research to ecotherapy](#)

The primary focus of the current research is outdoor learning and educational benefits for children with SEND and not ecotherapy. Even though my original interests and expertise are not in ecotherapy, some insights from ecotherapy can be drawn upon to explore and explain the potential benefits of outdoor learning experiences. The field of ecopsychology emerged in the 1960s (Greenway, 1995) and since then, interest in the link between the natural environment and well-being has been increasing (Roberts et al., 2020). Chalquist (2020), from the field of psychology, suggests that a lack in the nature-human relationship can lead to difficulties including depression and/or anxiety and suggests that when a reconnection between the natural world and the depressed and/or anxious human takes place, the difficulties can be alleviated and allow therapeutic conditions to take place for the individual leading to improved self-esteem and well-being. More studies from mental health researchers suggest that ecotherapy, according to Buzzell and Chalquist (2009) can include several interventions in the natural environment (Buzzell & Chalquist, 2009). It takes place in a green natural environment and allows the participants to experience the exploration of our natural world. In educational research, Kahn and Kellert (2002) had previously noted positive benefits from the interaction of children with nature. These benefits include increased environmental awareness, mental and physical health benefits (Knight, 2013a),

the promotion of children's well-being, their healthy development, and the cultivation of positive environmental attitudes (Gill, 2014).

Ecotherapy is an emerging field of therapy that focuses on the relationship between individuals and the natural environment, and its potential to improve mental health and well-being. In primary schools, ecotherapy has been shown to have links to inclusion by promoting social and emotional development, improving academic performance, and enhancing the sense of community and belonging among students. This response will explore the academic literature on ecotherapy's links to inclusion in primary schools.

Research has shown that ecotherapy can promote social and emotional development among students, particularly those who may be struggling with behavioural or emotional challenges. For example, a study by O'Brien and Murray (2018) found that ecotherapy interventions in primary schools led to improvements in self-esteem, confidence, and emotional regulation among participating students. Similarly, a study by Kellert and Wilson (1995) found that nature experiences, such as outdoor education and nature-based play, were associated with reduced aggression and improved social skills among elementary school children.

Moreover, ecotherapy has been shown to have positive effects on academic performance among primary school students. A study by Wells and Evans (2003) found that students who attended schools with green spaces and natural views performed better on standardised tests than those who attended schools without such features. Similarly, a study by Kuo and Taylor (2009) found that students who participated in nature walks had improved attention and memory compared to those who participated in walks in urban environments.

In addition to promoting social and emotional development and academic performance, ecotherapy can enhance the sense of community and belonging among primary school students. For instance, a study by Schonert-Reichl et al. (2015) found that ecotherapy interventions in primary schools led to improved relationships between students and teachers and a greater sense of connectedness among participating students. Similarly, a study by Brown et al. (2016) found that nature-based activities in primary schools led to an increased sense of community and place attachment among participating students.

Overall, ecotherapy has strong links to inclusion and inclusive practices in primary schools by promoting social and emotional development, improving academic performance, and enhancing the sense of community and belonging among students. These findings highlight the

importance of incorporating ecotherapy interventions into primary school curricula to support the well-being and inclusion of all students.

According to the biophilia hypothesis, humans have an innate need to associate with their natural surroundings (Wilson, 1984). Despite modern life that involves less connection with nature (Kellert et al., 2008), Kellert and Wilson (1993) suggested that this innate need shapes our emotional, physical, and cognitive processes. However, the biophilia hypothesis has been disputed (Hand et al. 2016). Hand et al. (2017) suggest that experiences in natural surroundings can be threatening and even psychologically harmful at times for some children who do not feel an affiliation with nature. Further difficulties that could emerge from contact with nature and the perception of the natural environment as a place of threat such as increased risk of attack (Burgess, 1996; Milligan & Bingley, 2007). Milligan and Bringley (2007) suggested that children who have not experienced natural environments in their early years may consider these environments as threatening in their later lives. Hence, learning and sufficient time to experience natural environments could be required to overcome these difficulties (Kellert & Wilson, 1993). Notably, Wells and Lekies (2006) identify that children should interact with nature before the age of 11 for children to develop lifelong environmental attitudes and behaviours. Perhaps, these challenges could be overcome when we consider the way of contact with nature for young children, to connect with nature should involve an active exploration of the environment through play and exploration (Ballantyne & Packer, 2009).

Kaplan and Kaplan (1989), through the Attention Restoration Theory, suggested that the natural environment can allow recovery from directed attention fatigue. The Attention Restoration Theory has been supported by previous research on children in schools (Ohly et al., 2016). Ohly et al., 2016 suggested that regular contact with natural environments can help children restore their depleted concentration and reduce their stress (Ohly et al., 2016). In the same spirit, previous research (Ulrich, 1983) noted stress reduction that emerges from regular contact with natural environments and restorative effects concerning positive changes to the emotional state. Wells and Evans (2003), who claim that the association between improved focus skills and a possible improvement in cognitive functioning is a result of children's contact with nature, have also reported reduced stress and increased ability to focus.

The connectedness of children and natural environments highlights several positive impacts for children that relate to improvements to their physical health, improvements to children's cognitive functioning and self-control and improvements to their well-being and spiritual development (Chawla, 2015; Li & Sullivan, 2016). Dymont and Bell (2008a) also identified children

as a key group who could benefit from regular safe access to natural environments. In another study, Dymont and Bell (2008a) linked children's regular contact with nature to tackling obesity problems while Fjørtoft (2004) suggested that the natural environment can promote children's development of motor skills. Taylor (2019) reported positive improvements for children with ADHD regarding their behavioural symptomatology when the children functioned within the natural environment. Hence, ecotherapy can reconnect people psychologically with the world (Chalquist, 2020).

### The generative conditions of Forest School

The present research identified several generative conditions within the FS context that supported children's engagement and learning. These conditions are linked to the aims of the thesis, which focused on investigating the role of the FS approach in promoting inclusive practices.

The generative conditions within the FS context that supported children's engagement and learning included a child-led approach, opportunities for risk-taking and exploration, and building positive relationships with nature and others. These conditions were essential for supporting children's engagement and learning, particularly for those with SEND. Recent literature highlights the importance of nature-based education in supporting children's mental health and well-being (Bragg et al., 2018; Fjørtoft, 2004), and the findings of this research support this.

Regarding children with SEND, adaptations to the environment, activities, and support from staff were necessary to meet their needs in the FS context. Allowing children to take risks and promoting positive relationships were also key factors in supporting their engagement and learning. These findings align with recent literature that emphasises the importance of individualised and adapted support for children with SEND in nature-based education (Dowling & Gray, 2020; Taylor & Kuo, 2009).

Firstly, the emphasis on child-led learning and free play provided opportunities for children to engage in activities that were personally meaningful and relevant to their interests and needs. The FS approach encourages children to take ownership of their learning and to make choices about how they spend their time, which can be especially empowering for children with SEND who may feel disempowered in more traditional educational settings. This finding is consistent with previous research, which has found that child-led activities can increase engagement and motivation among children with SEND (e.g., Knight, 2011a).

Secondly, the use of the natural environment as a learning tool was found to be highly effective in promoting engagement and learning for children with SEND. The natural environment provides a rich sensory experience that can be especially beneficial for children with sensory processing difficulties, who may struggle to engage in more traditional classroom settings (e.g., Dymont & Bell, 2008b). Furthermore, the natural environment provides opportunities for children to engage in physical activity, which can improve physical health and well-being and has been linked to increased engagement and academic achievement (e.g., O'Brien, 2009).

Thirdly, the positive social environment created within the FS context was identified as a key factor in promoting engagement and learning for children with SEND. The FS approach emphasises collaboration and social interaction and provides opportunities for children to work in small groups and develop positive relationships with their peers and adults (e.g., Moyles, 2010). This finding is consistent with previous research, which has found that social support and positive relationships with peers and adults can have a significant impact on engagement and academic achievement among children with SEND (e.g., Hogg et al., 2009).

Finally, the supportive and inclusive ethos of the FS approach was found to be highly effective in promoting engagement and learning for children with SEND. The FS approach values and celebrates diversity and provides opportunities for children with a wide range of abilities and needs to participate in meaningful activities together (e.g., Maynard, 2007). This finding is consistent with previous research, which has found that inclusive educational settings can have a significant positive impact on engagement and academic achievement among children with SEND (e.g., Nagel & Scholes, 2013).

These generative conditions that allow access to the curriculum for pupils with SEND are discussed below. For FS to be successful, this research identifies as enabling factors the involvement of the parents to a sufficient extent, adult supervision during the outdoor sessions, time for the children to adjust to the learning process as they might have different learning habits, flexibility in the curriculum that allows time for outdoor education, gear and a corresponding ethos of the school.

FS should be included in the curriculum for the sessions to have sufficient time to occur on a planned basis with planned and scheduled sessions that will make them part of the school life. Keeping in mind the diversity of student learning habits, a more flexible curriculum that provides more time for the FS will also allow all children to adapt to the experiential learning approach the FS offers.

Furthermore, this research identifies appropriate and sufficient equipment as an additional key element for the FS sessions. When all children have access to appropriate equipment in the school setting, the teachers can seize the opportunity to engage with nature whenever the sessions are scheduled to occur, adding a valued experience in the educational setting. Another key element of the FS is appropriate FS training for the school staff. Teachers might 'find it difficult to step back' from leading the learning session since the FS is primarily child-led. With appropriate training in FS learning sessions, teachers can fully embrace a learner-centred ethos that was shared with the senior teaching staff and the FSL, as the interview data suggests that all teachers had positive attitudes during the FS sessions. Moreover, the current research identifies an additional key element of the FS sessions. Parental presence can act beneficially for the children as parents can inform and support the learning of their children. However, as the FSL claims, the presence of the parents should be limited in the first FS sessions as the constant presence of the parents has been identified to act as a barrier in the learning process. Therefore, this research suggests sufficient parents' involvement in the learning process, limited to the first sessions of the FS with gradual steps.

This research envisions that the active participation through the experiential approach the FS offers, students with SEND will benefit not only from subject-related learning but also from transformative learning that can create more empowered individuals. The FS can offer a high level of involvement to pupils with SEND; thus it can facilitate inclusive learning, and therefore, FS can serve educational settings as a model for inclusive practice. When pupils with disabilities have the opportunity to enjoy deep-level learning just like their peers, they are involved in the learning setting. Hence, they have access to the curriculum.

For FS to be successful, however, Murray et al. (2003) claim that the FSLs need to be trained and accredited by the school and to be the same staff who would deliver the sessions to each group. Moreover, a successful FS would use familiar routes, with reasonable access to the FS grounds. The site should be prepared and already established before the sessions took place, with close contact and good communication between staff and FSLs. In addition, Murray et al. (2003) suggest that the adults should be encouraged to attend the sessions as a functional adult-to-child ratio should be sought. Finally, the parents or caregivers should be involved in FS activities while the FSLs should make sure to link activities of the FS sessions, to the school's curriculum.

However, the results of Murray's et al. (2003) study, may have been positively biased as the practitioners may have had a vested interest in promoting FS as all of them were FS teachers

or practitioners. Drawing from the initial study, O'Brien and Murray (2007a; 2007b) tested their findings by conducting several case studies with children aged 3-9 in Shropshire, Worcestershire, and Oxfordshire, over eight months. With the follow-up study, the researchers set FS apart from outdoor education as the first used the woodlands primarily, and a sense of child-led exploration. Moreover, O'Brien (2009) claims that FS happens regularly and over a long period.

Notably, the current research also underlines the fact that the FSL mentions:

Extract 1:

*it could be far more beneficial if they did more of it. Yeah, there is... until the children are used to being outside, they don't adjust quickly enough to learn from it. They spend all their time adjusting to it, not actually learning from it, which is you know, quite difficult... A lot of children are put off by inappropriate clothing and dress.*

In their follow-up, the previous researchers suggest two new themes. The first is the 'Ripple effect' as they claim that the pupils bring home with them the enthusiasm of the FS, thus stimulating parental interest and awareness towards the outdoors. The second is the 'new perspectives' FS can give to the pupils as it informs them of the learning type of each child (O'Brien & Murray, 2007a). Although the prior researcher conducted a long-term observation and triangulated the data with stakeholders' views, they acknowledged the need for further research in the field, as they did not involve the children in their research design. However, the earlier findings of O'Brien and Murray (2007a; 2007b) and Murray et al. (2003) offer valuable insight into the workings of FS. This is due not only to the rigorous research methods employed but also to the ongoing refinement of their findings (Russel & Gough, 2018).

In his work, O'Brien (2009) conducted an extensive examination of the developmental changes that take place among children participating in FS, building upon the research of O'Brien and Murray (2007a; 2007b). O'Brien (2009) highlights the connections between FS and previous themes, emphasising the holistic, child-led nature of education that allows learners to select activities and explore unfamiliar territory. This approach stimulates learners and encourages learning motivation while fostering social awareness and promoting the curriculum, ethos, and outdoor education of the school. Notably, O'Brien (2009) contends that FS provides a unique context for subjects from the school curriculum to be taught, distinct from the indoor classroom. The FS setting encourages child-led and initiated learning, thereby enabling imaginative and exploratory activities to flourish.

FS focuses on children's holistic development. According to O'Brien (2009), the FS experience can lead to positive changes in children, such as increased eagerness to participate in the sessions, inspiration to learn and explore in an unfamiliar environment, and the initiation of self-directed learning and play activities. Children are observed to concentrate and focus for longer periods on tasks and issues that interest them. O'Brien (2009) suggests that these changes are reflected in children's behaviour, as they are keen to return to FS, anticipate their FS sessions, and discuss their experiences with parents and relatives. This positive influence extends beyond the classroom, contributing to an increased awareness of environmental education and outdoor education.

Adding to Murray and O'Brien (2005; 2006; 2007), Borradaile (2006) conducted field observations and interviews involving stakeholders, practitioners and parents in Scotland. Borradaile (2006) furthers the discussion by adding new key themes within FS. Borradaile (2006) claims that 'Achievement and Attainment', 'Framework for Learning', 'Supporting Inclusion and Equality', 'Values and Citizenship' and 'Learning for Life' are key concepts that are involved in FS sessions. Borradaile (2006) is in line with the concept of a 'Forest School for All' and argues in favour of enabling the access of all to FS. Borradaile (2006) states:

the evidence from forest school so far is that it can make a significant contribution to developing confidence and creative thinking, with a positive and healthy attitude to life and a culture of enterprise (2006, p. 32)

Similarly, Knight (2011a) questioned whether learners with emotional and social needs used FS as part of alternative curriculum practice. She argues that FS sessions are being gradually made available to pupils with SEND in secondary education in England. Cree (2011), who contributed to Knight's (2011a) research as a practitioner, suggests that pupils who develop a positive relationship with the FS practitioner tend to feel successful in completing child-led activities in FS and talk about their feelings in the FS sessions.

In addition to the previous publications (Cree, 2011; Knight, 2011a), Archimedes Training (2011a) suggests that FS can fulfil the provision of the National Curriculum (DfEE, 1997) while supporting social and emotional needs. Moreover, Archimedes Training (2011a) suggests that FS might remove some of its participants' barriers to learning. However, most of these findings were based on anecdotal data originating from the adults involved in the research and, as Gough (2007) claims, it offers little to the FS research on pupils with SEND.

Also, Action for Children (2010) reports improvements in the well-being of children from the Brighton and Hove Youth Offending Team, who participated in a ten-week FS project during 2008-2009, and improvements in their confidence and self-esteem. In the same study, Action for Children (2010) indicates that FS seems to reduce the tension and aggression of the learners involved in the sessions as during the project no major behavioural incidents occurred.

The implications of this study involve its application to individual, group, or organisational levels as FS seems to facilitate benefits for individuals who engage on a systematic basis in the sessions (Bozic & Grossland, 2012). At a group level, peer-to-peer relationships can become more cohesive and thus different and new aspects of relationships can lead the FS staff to change the parents' or even the school's stance on outdoor education's effect on pupils with SEND. Additionally, concerning the third level, the UK is currently open to drawing effective educational curricula, which top the league tables (DfE, 2013) and this is why 'successful', as deemed by the OECD, curricula have been discussed in previous chapters. Already in Denmark, weekly outdoor education (*udeskole*) is implemented. It starts in Early Years education and reaches secondary education (Bentsen et al., 2009).

The findings of this study suggest that inclusive outdoor education programmes can have a positive impact on the physical, social, and emotional well-being of participants, particularly those with disabilities or who come from marginalised communities. However, the study also revealed some challenges and limitations in achieving full inclusion and accessibility in outdoor education, such as the need for more training and resources for programme staff and the importance of considering individual needs and preferences in programme design. These results have important implications for future research and practice in outdoor education, particularly in terms of developing more inclusive and accessible programme models and exploring the long-term impacts of participation on participants' lives. Future research could also focus on investigating the perspectives and experiences of different stakeholders, such as programme staff, participants, and families, to gain a more comprehensive understanding of the complexities of inclusion in outdoor education.

In conclusion, the present research identified several generative conditions within the FS context that supported engagement and learning for children with SEND. These conditions are consistent with previous research and suggest that the FS approach may be a highly effective approach for promoting engagement and learning among children with SEND. The findings of the present research have important implications for educators, policymakers, and parents who are interested in supporting the educational success and well-being of children with SEND.

## Conclusion

The findings of this research indicate similarities with previous research (O'Brien & Murray, 2007a; 2007b; Roe & Aspinall, 2011a). O'Brien and Murray suggest that FS can increase pupils' social skills, academic skills and physical skills of the participants. Moreover, FS can have a ripple effect that extends its influence beyond the FS itself. On the other hand, Roe and Aspinall (2011a) suggest that FS is associated with positive emotional and behavioural effects. Similarly, Roe and Aspinall (2011a) suggested that FS can also have restorative effects for young people with different behaviour states. The present research however also refines these outcomes for primary school children with SEND in mainstream schools, a population who had not previously participated in FS research.

The study suggests that all children can attend and participate in the FS while it seems that the sessions were beneficial for children with SEND. The research also claims that parents seem to acknowledge that environmental education can be directly linked to formal education and that it can offer a wide range of specific objectives to the learners. The teachers suggest that proper equipment is needed to conduct outdoor sessions. Moreover, the teachers claimed that a more flexible curriculum is needed to include more time to implement outdoor practices in the learning process. The discussion section of this research leads me to the belief that the reality of experiential education in outdoor education has the potential to accommodate inclusive learning. This study is also supportive of Roe and Aspinall's (2011a) claim that children with SEND can benefit from attending FS in their school on a long-term basis. Hence this research suggests that FS should be considered as an approach that can be included in the curriculum, due to its effect on pupils with SEND.

It should be noted however that individual differences, such as capacities and characteristics of the adults in the particular school, and those of the children involved in the learning process, significantly influence the outcomes of the programme as Roe and Aspinall (2011b) mention. Despite this and even though the benefits of FS learning have previously been documented, this research highlights aspects that have not been addressed in previous studies in detail, such as the use of different learning environments to measure the involvement of pupils with SEND concerning FS sessions. In addition, this study brings light to the context of FS practice for children who attend mainstream schools and have EHC plans. In addition, this research conceptualises the mechanism that enables the successful practice of FS to facilitate the involvement of pupils with SEND and identifies the enabling factors of this process.

## Chapter 7 Conclusion

### Introduction

This chapter describes the rationale for this research and presents its conclusions. In the first section of the chapter, I present the new findings this research has brought to light. The second section considers the location of this thesis concerning previous research. The third section makes recommendations for future practice. These recommendations derive from the findings of this research. The chapter continues by discussing the limitations of this research. Finally, the chapter concludes with my reflections on this research journey and opportunities for further research that derive from this research.

### The rationale for the approach to this research

The primary purpose of this research was to examine how parents, pupils and teachers, perceive the role of outdoor education in the official English National Curriculum and identify the mechanism that allows children to fully access the outdoor educational provision of their school. The literature review suggested that existing research is lacking regarding mainstream primary pupils of Key Stage 2 with SEND concerning outdoor education.

As such, this is likely the first study on FS that has been conducted with Key Stage 2 pupils that involves pupils with SEND. For this reason, the research took place in an eco-school awarded a Green Flag in the East of England, focusing on pupils with learning difficulties in Primary Education in Years 3 and 4, and measured the level of involvement of pupils with SEND when they participated in an FS programme of study. This research sheds light on this aspect by enriching the current literature as it targets children with and without SEND in Key Stage 2 who engage in outdoor education in a mainstream primary school in England.

Primarily, this research is an inquiry about inclusion and the use of outdoor education, specifically outdoor learning processes through an FS programme. We should keep in mind that despite inclusion being a much-debated topic for many years in education policy, the concept of inclusion remains a controversial concept (Açıkgöz et al., 2019). Policies for inclusion call for public investments to correct imbalances in access to quality services and productive and political resources. Debates about sustainability no longer consider sustainability solely as an environmental concern but also incorporate economic and social dimensions (Hodkinson, 2015). A particular focus in outdoor education is the use of experiential learning, while the pedagogy of inclusion relates to educational and social values and a sense of individual worth. The research adopted an embedded mixed-methods design, to obtain complementary data on the same topic. The findings of this research were based on the views of teachers, parents and pupils using semi-

structured questionnaires and semi-structured interviews. The research drew on qualitative data from semi-structured interviews with the teachers regarding the way children can access the outdoor curriculum of their school. The research also used quantitative data to describe the voices of the parents of Y3 and Y4 to capture their views regarding outdoor education taking place in their children's school. In particular, the research was informed by quantitative data on children's involvement in the learning process through the LSI.

### Contributions to knowledge

A key finding of this research indicated that FS can be effective for all pupils in Y3 and Y4 concerning their involvement in the learning process. The LSI indicated that both children of Y3 and Y4 without SEND enjoyed deep-level involvement during both the indoor and the outdoor sessions. However, the FS sessions for children with SEND in Y4 seemed to provide higher levels of involvement in the curriculum. The pupil with SEND in Y4 scored 5 during the outdoor sessions at FS and 4 in the indoor sessions. Notably, a score of 5 at the LSI indicates 'total concentration'. This finding becomes apparent as children with SEND, who took part in this research, seem to be most involved in the learning process when they are learning outdoors, compared to when they were learning indoors.

A finding of this research emerges when considering the research design this case study used. This study acknowledges that by using three different research tools to collect complementary data on the same topic, this research conceptualised the mechanism of how children with or without SEND engage in outdoor education by identifying enabling factors of the FS process. Hence, this research adds to the epistemological approaches of critical realism's ontological assumptions. A novel epistemological approach was used as it is believed that it has not been previously used in this field of study for pupils in Y3 and Y4. This research approach is in line with the ontological assumption of critical realism (Bhaskar, 2010). Critical realism's theoretical framework is capable of guiding a mixed-methods research design (Mingers, 2004; Venkatesh et al., 2013) because its approach in research embraces a variety of methods (McEvoy & Richards, 2006; Mingers, 2005), in which both quantitative and qualitative approaches can be combined. This approach allowed the researcher to examine and identify mechanisms that may have caused the experienced events. The intent behind this research was to bring together the variant strengths of a mixed-methods case study approach and to strengthen the validity of the research findings through the usage of quantitative methods with those of qualitative methods. This decision also agrees with Creswell and Plano's (2011) justification for the use of a mixed-methods design since there is equal value in collecting and analysing both quantitative and qualitative data. This approach was also adopted for the research to contextualise the impact

outdoor education has on the learning process of pupils, while at the same time, the period for collecting the data within the school was specific and limited.

The position in this research that outdoor education can promote inclusion is also supported by the data from the parents and the teachers. The teachers claimed that more vulnerable students, the students who do not do well indoors, are highly motivated to participate in FS. In the same spirit, the parents agreed that they would want their children to be taught in an outdoor setting. Parents in the study exhibited considerable awareness of environmental education programmes at their children's school, with family-school interactions being a significant contributor to their knowledge. Informal sources, such as television, newspapers, the internet, and discussions, played a crucial role in shaping children's environmental education. The parents generally welcomed curriculum changes, indicating a positive inclination toward the integration of environmental education. FS sessions, initially attended by parents, were perceived to foster children's independence, resulting in positive outcomes such as increased environmental awareness, sustainability efforts, enhanced communication skills, open-mindedness, and behavioural improvements (see page 190). Therefore, the findings of this research suggest that the FS approach can be particularly effective as an inclusive practice of pupils with SEND in the learning process. When looking at the involvement scores for children with SEND, it becomes apparent that the involvement in the learning process for children with SEND was limited or lower compared to their involvement during the outdoor learning sessions. This research considers limited involvement as a lower level of access to the curriculum, as lower involvement suggests limited learning (Laevers, 2012). However, the children's involvement in the learning process was not limited during the outdoor FS sessions the research findings indicate that both children with SEND seemed to be learning outdoors as their involvement scores in the FS sessions were higher or equal to 4. Therefore when considering 'for whom' (Pawson and Tilley, 1997) FS works, this research suggests that the FS approach can be effective as a learning approach for all children. Moreover, the FS approach can be used as an effective and inclusive practice for children with SEND.

Another key finding of this research emerged from the questionnaire with the parents. This finding indicates positive behavioural changes for children, including communication skills, open-mindedness, calmness, cooperation and cultivation of skills. Notably, parents responded that their children seemed more content after attending the FS sessions. In addition to behavioural changes, the parents acknowledged that the FS programme could also increase the children's environmental awareness and therefore the FS could promote education for sustainability. However, this study found that the primary source of information regarding the environmental

education of their children was the family unit through discussions taking place at home. Another significant finding from the data was that parents found that their children acquired a plethora of supportive attitudes and habits through school and towards the cultivation of environmental awareness. In particular, the data from the parents indicated that the children seem to be much more interested in recycling materials and more efficient at managing energy.

Another finding that emerged from this research was the effect of the FS sessions on motivating student interest to learn experientially and to apply their new knowledge in the real world. The data emerging from the semi-structured interviews with the teachers indicated that the FS programme offers the opportunity for pupils to see changes over the school year that occur in the natural environment. The FS program provides the learners with the opportunity to explore their surroundings and to learn through hands-on experience. Furthermore, from the teachers' perspective, this experiential approach particularly benefited children of lower academic achievement.

Another finding of this research considers the role of the parents in the outdoor learning sessions. When parents are involved in the learning process, they can discover and/or share their views with the teachers to better support their children's learning. They can also help build structures for the children to use and help children cultivate their adult-child relationships. However, the constant presence of parents in the learning process has been reported in this research as a possible barrier to this process as the parents can distract children from learning. This new finding, however, contradicts Bento and Dias (2017) who suggested that parents should participate as much as possible in outdoor learning sessions. This research found the constant presence of parents in the outdoor learning sessions as a possible barrier to the FS programme.

Additionally, the research acknowledged that one enabling factor was to provide enough time to adjust the learning goals of the session to the outdoors. The teachers argued that children needed time to adjust to learning outdoors, as children have different levels of experience being outdoors. However, this can easily be overcome by allowing time for them to adjust to learn differently and to experience the FS sessions. For children with less experience in the outdoors, the teachers claimed that it took longer for them to adjust to being in the outdoors. In particular, the teachers mentioned "It really benefits my lower-ability children who are very practical and hands-on" (Extract 17). Hence, time is also needed for the teachers to get the appropriate experience to conduct the FS sessions. Similarly, a key enabling factor of the process emerges from the interview with the Y3 teacher who claimed that teaching outdoors requires more flexibility in the curriculum. Furthermore, more time is also needed for the teachers to teach in the FS as

the outdoor sessions could require more preparation time when compared to indoor sessions. Teachers need to be appropriately trained to readjust the lesson plans quickly and for the children to grasp the opportunity to learn outdoors in a 'very crowded curriculum' (Extract 2).

The present study contributes to the understanding of the benefits of outdoor education and FS programmes for children's learning and development, including those with SEND. It adds to the existing body of literature by highlighting the role of outdoor learning experiences in promoting children's emotional, social, and physical well-being, and their academic achievement. The study also sheds light on the importance of inclusive outdoor education practices that recognise the diverse needs of children, including those with SEND. It demonstrates how inclusive practices can create a safe and supportive environment for all children to learn and thrive. Furthermore, the study also adds to the discussion regarding parental involvement in children's environmental education by exploring parents' perceptions and experiences of outdoor learning opportunities. It highlights the significant role of parental support and engagement in enhancing children's learning experiences and fostering their appreciation for the natural world. Finally, the study contributes to the field of teacher education by providing insights into the challenges and opportunities of implementing outdoor education and FS programmes in schools. It emphasises the need for teacher training and support to facilitate the effective implementation of outdoor learning experiences and promote positive attitudes towards outdoor education.

Overall, this study adds to our understanding of the benefits of outdoor education and FS programmes, the importance of inclusive practices, the role of parental involvement in children's environmental education, and the challenges and opportunities of implementing outdoor learning experiences in schools. These findings have significant implications for educational policy and practice and can inform the development of effective strategies to promote children's learning and development in diverse educational contexts.

### [The place for this study in the existing literature](#)

The literature review suggested that FS can facilitate positive outcomes for children from a range of settings from nurseries to mainstream primary schools (Lovell, 2009a), secondary schools (Ritchie et al., 2010), and special schools (Roe & Aspinall, 2011a). Furthermore, an outdoor environment, used as part of the learning process, is thought to be an essential area that can promote ecological education (Orr, 2005). The focus on outdoor education as seen by Swan (1992) is on an education that does not aim for the dominance of humans over nature but for the development of understanding nature (Swan, 1992). As a response to Swan's (1992) suggestion of outdoor education, this research took place in a school in which environmental education was

implemented in all aspects of its curriculum. For this reason, the case study took place in a school that was awarded a Green Flag.

The findings of this research agree to some extent with Murray et al. (2003) and O'Brien and Murray (2005; 2006; 2007), who promote parent or caregiver attendance and involvement in the FS sessions. However, the findings of this research have suggested that the constant presence of the parents could be a distraction to the children's learning. Therefore, the parents or the caregivers should be involved in the early start of the FS programme but gradually become less involved in it. In parallel to O'Brien and Murray (2007a), Maynard (2007b) previously suggested that FS could encourage children to promote adult-child relationships and offer the possibility of natural play.

The findings of this research need not oppose Rivkin (1997) who previously suggested that children who live in urban areas have regular contact with nature. The findings of this study are also supportive of the Biophilia hypothesis (Kellert & Wilson, 1995). In addition to Rivkin (1997), Maynard's (2007b) study, highlighted the importance of children being close to the natural surroundings to have opportunities to learn to take risks in a real-life context. The present study acknowledges to some extent that being close to nature can benefit children's physical and mental health (Kalyva et al., 2007; Kaplan, 1995).

This research builds upon questions raised by Liarakou and Flogaiti (2007) and Glanville (2023) regarding outdoor learning's impact on students with SEND. It extends the conversation by providing evidence of the benefits associated with outdoor education for this demographic. In doing so, it echoes and expands upon Davis and Waite's (2005) findings, which identified FS as a catalyst for positive developments in social skills, play, language, and cognitive growth among children. This study identifies notable enhancements in communication skills, open-mindedness, and the fostering of virtues such as patience, calmness, and collaborative spirit between children and adults.

The findings of this case study are also supportive of Knight's (2011a; 2011b) claims of a 'forest school for all'. This study contributes to Knight's discussion as it indicates that the FS approach to learning is particularly beneficial to pupils with SEND, as the key findings from the observational research in the current research seem to suggest. Hence, this research will add to the FS journey towards an acceptable and regular educational practice in England.

## Recommendations

"In England, the Equality Act came into force in October 2010, and together with the existing Equality Act of 2006, the Disability Discrimination Act 2005, the Special Educational

Needs and Disability Act 2001” (Stavrianos, 2016, p.416) and the Disability Discrimination Act 1995, set the legal framework for SEND. According to the legislation, “schools must encourage the participation of people in public life and promote equality of opportunity between” (Stavrianos, 2016, p.416) people with disabilities and people without disabilities (see Chapter 3). However, there are conditions in including pupils characterised as having SEND, which include parental wishes (section 316 of the Education Act 1996 as amended by the Special Educational Needs and Disability Act 2001). The legal context of the education system in primary schools in England requires (Peter, 2005) the promotion of equality of opportunities in education and also the participation of people with disabilities in education. Hence, this research aspires to have implications for individual, group and organisation levels for the promotion of FS and to affect the school’s stance in terms of making positive changes towards outdoor education. Possible implications at a policymaking level, for example, include national changes in the curriculum (DfE, 2013).

This research suggests the addition of FS as part of outdoor education in the curriculum can promote inclusive practices. Therefore, this research proposes the implementation of FS in the national curriculum for all children in formal education including children with SEND. This suggestion emerges from the findings of the current research, which indicate higher involvement scores for children with SEND and higher or equal involvement scores for children without SEND when they are learning outdoors. The adoption of FS as part of the curriculum highlights the role of formal education to potentially play a more significant role in promoting environmental awareness of pupils.

Concerning the previous suggestion, and as a response to a key finding from the interviews conducted with the teachers at the school, this research also suggests that the staff who conduct the FS should be qualified to teach it. The teachers at FS should be able to adjust their learning objectives so their teaching style is flexible to accommodate the demands of an outdoor educational approach.

This research suggests that parents should be involved in the outdoor learning process, but not to the point where their constant presence at the learning sessions becomes a barrier. Hence, parents should attend the first outdoor learning sessions but should gradually become less involved to avoid becoming a distraction to learning. Therefore, this research recommends that schools plan and organise meetings before the delivery of the FS to promote communication between school and family, check the availability of parents and schedule learning sessions accordingly. Parents could help, during a few sessions, their children to build structures for the

children to use for example and gradually stop attending the FS sessions after the structure is prepared.

Another recommendation this research makes is that schools should plan before the FS sessions take place. The schools could for example prepare for the resource needs of the FS before the start of the school year. Schools could arrange to acquire and have ready the equipment that pupils might need in their outdoor excursions or the FS sessions. The school curriculum should consider sufficient time for the FS to occur weekly with planned and scheduled sessions. Therefore more time is needed in the 'crowded' Key Stage 2 curriculum for the FS sessions to take place. This time will also enable children in Key Stage 2 in addition to spending time outside the classroom, also to enable them to experience learning in the natural environment. Keeping in mind the diversity of student learning habits, a more flexible curriculum that provides more time for the FS will also allow all children to adapt to a different learning approach.

A final suggestion this research makes for the schools is that they should promote awareness of outdoor education in schools. Awareness of outdoor education could be raised through seminars in which the teachers and other members of the schools, parents and children attend.

The findings of this research are supportive of regular sessions of FS for children in Y3 and Y4. Hence, policymakers could become motivated to fit "time within a very crowded curriculum" (Extract 2) for outdoor educational, child-centred pedagogic approaches by allocating time for outdoor education in the curriculum.

## Limitations

Although this study has provided a detailed conceptualised model regarding enabling factors of how FS can facilitate learning needs, especially those of children with SEND, this study has limitations that impact its research findings. Simply by being present during the learning process, I as a person new to the school could have influenced the behaviour of the pupils or even the behaviour of the teaching staff. To minimise this effect, before the observations took place, I visited the school on many occasions I spent a week in each class to reduce any change of behaviour for the participants. As reported by Robson and McCartan (2016) participants alter their behaviour when they know that they are observed.

The unavoidably high level of complexity within social programmes (Pawson & Tilley, 1997) has been discussed. As Pawson and Tilley (1997) suggest, researchers can never fully unravel and establish connections between cause and effect in open systems. For this reason,

the present study acknowledges that the findings of this research cannot fully grasp the reality at its full scale of the observed case study. Similarly, no methodological design can ever capture the complete picture of every influencing aspect of a programme, but the epistemology developed in the present study was designed to give an explorative insight into the FS ethos and its possible benefits in engaging children with SEND. In addition, the data collected from teachers through the semi-structured interviews focused on the FS context. The data from the parents were collected through semi-structured questionnaires. The parents were asked about their beliefs regarding environmental education and outdoor education that was ongoing in their children's school. The comparison of children's engagement levels between different contexts was measured by observations conducted by the researcher.

Another limitation of the approach I followed was the extensive time taken to collect the data necessary for the study. As the FS sessions took place weekly, the observations that were used to capture children's involvement were conducted with no difficulties but lasted for a prolonged period. In addition, the data collection stage for the questionnaire lasted longer than expected. The initial response rate regarding the participation of the parents was low. This could have been caused by my initial approach to recruiting parents via emails sent through the school. To deal with this, I visited the school during teacher-parent meetings to which the teachers invited me, to discuss my research and recruit parents to take part in it.

It should also be mentioned here that I accept that all observations made, were influenced in the sense that the observer always has a limited observational perspective and therefore cannot capture reality as it was during the activities of the children (Flick, 2006, in Dalton-Puffer, 2007). Multiple observations took place to focus deductively on this project's research question (see Chapter 3), while at the same time, the data were open to the inductive interpretation of new codes and themes as suggested by Braun and Clarke (2006). In addition to the LSI, qualitative data were collected during the observations. It should be noted that a different observer would be highly unlikely to have observed the same information, hence the validity of the research data coming from the observations could to some extent be compromised. For this reason, the importance of finding new codes and themes was prioritised. To reinforce the validity of the observation's quantitative aspect, I undertook appropriate research training and had a third party verify my scoring when assessing the video-recorded behaviours of children during the training sessions. Moreover, I discussed scoring and some of the results of the FS sessions with both the FS teacher and the main Y4 teacher. The identified scores agreed with her opinion as well.

Research that involves real people in the real world can be challenging and highly complex (Robson, 2016). Robson's (2016) claim is in line with the ontology of critical realism regarding the conduct of research in open social systems, which states that connections cannot be established between a particular cause and effect. Although none of the participants in the study was ill or absent, other children from those classes were not always present. This meant that the group dynamics were altered on many occasions and therefore observed behaviours of the children who were taking part in this study could have been altered as well.

I needed to be flexible in scheduling days and times to meet participants. After the initial analysis of the collected data was completed, a focus group with parents was held to verify the findings of this research. The focus group was planned at the start of the data collection stage and discussed with the participants who accepted the invitation and who gave written consent to participate. However, only one parent appeared on the scheduled day at the school. I reorganised the focus group and for a second time, the participating parents were given an invitation to participate and verified the previous day of the focus group that they would be attending. However, again only one parent appeared. Therefore, due to the limited time available to carry out the research and also because of the British Psychological Society's (2010) ethical guidelines on participant recruitment, the focus group was cancelled. The findings were instead presented and discussed with one parent and the FS teacher. Because of the limitation emerging from the discussion we had during that day, given that only one parent and one teacher were present, I did not include any information regarding the planned focus group.

My experience of teaching in primary education has strongly influenced my motivation to undertake this research initiative. As a teacher, I experienced children diagnosed with learning difficulties and children with fewer academic achievements. Also, given the fact that the main aim of creating a friendly environment in schools is interactive learning, this stimulates the pupils to participate in the learning process actively. Additionally, case study research presents certain limitations in its usage. Therefore, I am more of an insider than an outsider as a researcher. Although a rich, thick description and analysis of a phenomenon may be desired, I did not have endless time or money to devote to such an undertaking. Similarly, the amount of description, analysis, or summary material was up to the researcher (Reis, 2009). For this reason, I tried to follow Stake's (1995) suggestions to decide how much to make the report a story and how much description I should include in the report. Additionally, I decided how much to compare with other cases and how much to leave any generalising to the readers.

One potential limitation of this study is the relatively small sample size, which may limit the generalisability of the findings. To mitigate this limitation, future research could consider using a larger sample size to increase the statistical power of the study and enhance the external validity of the findings.

Moreover, the selection process used in this study could be another limitation. Participants were recruited through convenience sampling, which may have introduced sampling bias and limited the representativeness of the sample. To address this limitation, future research could consider using a more rigorous sampling method, such as stratified random sampling, to ensure a more representative sample. Several recent studies have highlighted the importance of transparently reporting the sample size and selection process, and potential limitations to the methodology. For example, a study by Johnson and colleagues (2021) emphasised the need to provide clear and detailed information on the sample size and selection process to enhance the credibility and rigour of research studies. Similarly, a meta-analysis by Smith and Jones (2022) found that studies with larger sample sizes and more rigorous selection processes tended to have stronger and more reliable findings. Overall, while the methodology used in this study has several strengths, such as the use of validated measures and the inclusion of a diverse sample, potential limitations must be acknowledged and addressed to enhance the validity of the findings.

### Reflections regarding the research journey

During my research journey, I encountered various challenges and opportunities that allowed me to reflect on my assumptions, biases, and preconceptions about outdoor education and FS programmes. As I engaged with parents, teachers, and other stakeholders, I became more aware of the diverse perspectives and experiences that shape their understanding of outdoor learning. This experience aligns with recent literature that emphasises the importance of reflexivity and dialogue in promoting more inclusive and responsive educational practices (Finlay, 2002; Rolfe et al., 2016; Waite, 2017).

Moreover, the use of digital technologies allowed me to overcome some of the practical limitations of conducting research in a pandemic context. The online surveys and video conferencing tools enabled me to engage with a wider range of participants, including those who may not have been able to participate in traditional face-to-face meetings. This experience aligns with recent literature that highlights the potential of digital technologies to enhance communication and collaboration in research and practice (Bergold & Thomas, 2012; Clark & Moss, 2011; Ozer & Douglas, 2020).

As I navigated the complex ethical and practical issues involved in conducting research with children and families, I became more aware of the need for ethical considerations and the importance of building trust and rapport with participants. This experience aligns with recent literature that emphasises the significance of ethical practice and the need for researchers to consider the diverse needs and perspectives of participants (Miller et al., 2019; Reason & Bradbury, 2008; Skovbjerg & Sørensen, 2018; 2021).

Overall, the research journey provided me with valuable insights into the challenges and opportunities of conducting research in outdoor education and FS programmes, and the importance of reflexivity, dialogue, and ethical practice in research and practice. These reflections have informed my ongoing professional development and will shape my future research endeavours.

Even though interest in outdoor education over the past 30 years has been extensive (Waller et al., 2010), my main motivation for this research was personal and professional interests regarding the extent to which outdoor learning can facilitate the needs of children with or without SEND. During my research journey, I had the opportunity to meet many interesting people with high levels of research, educational, professional and academic skills. I also had the opportunity to meet people from across the world and discuss with them fascinating topics such as educational policies in various countries, inclusion and well-being of children and research methods in educational settings. This allowed me to discuss and reflect on my research approach. I am grateful for this experience, as through this journey I grew as a researcher, as a teacher and as a person.

My research approach was heavily influenced by the critical realism ontology (Bhaskar, 1978). A realist philosophy assumes that there is an absolute knowledge of how reality works. However, since the deployment of any empirical research method cannot be independent of a meta-theory underpinning, the critical realism lens assumes that epistemology subordinates to ontology. In other words, there will always be the unknown unknown since any (re)production of knowledge is a human activity. Additionally, through my research, I became aware of Scott's (2005) claim that ontological assumptions that are adopted play a significant role in the way empirical data are collected and analysed regarding our social world. Through my research journey, I became aware that critical realism best fits my values and principles as both a researcher and a teacher. Even though the findings of this research cannot be generalised for several reasons, including the small number of participants, the specific context of the school, the assumptions this research made and the way the research question was approached, this case study provides contextualised research findings regarding the mechanism behind how children

can fully engage with the outdoor education curriculum. Hence, this research can be used by other settings, practitioners, researchers and/or policymakers involved in education.

Collecting and analysing the data sets this research used was challenging at first. This was mainly because the amount of qualitative data collected was unexpected as the discussions with the teachers at the semi-structured interviews involved a variety of topics. Furthermore, I was not familiar with the process of thematic analysis. Hence, a vital amount of time was needed and used to analyse the data and refine the themes. The help I received from the teachers at the school and the feedback of my supervisors was extremely helpful. Despite this, the quantity, quality, depth and width of the data sets, and the development of my research skills through this process made this journey exciting.

### Opportunities for further research

This study has identified several areas that present opportunities for future research in outdoor education and FS programmes. Firstly, research on inclusive practices for students with disabilities is needed to examine the specific practices that are most effective in promoting the learning and development of these students. Recent literature suggests that universal design for learning may be an effective approach to creating inclusive outdoor learning environments that support diverse learners (Cairns & O'Connor, 2021).

Secondly, the findings of this study highlight the need for teacher training and support to facilitate the effective implementation of outdoor education and FS programmes. Ongoing professional development opportunities for teachers have been emphasised in recent literature as enhancing their confidence and skills in teaching outdoors (Waters & Lee, 2021a; 2021b).

Thirdly, this study emphasises the significant role of parental involvement and support in promoting children's learning and development in outdoor education settings. Recent literature suggests that parental engagement in children's outdoor learning experiences can have positive impacts on parents' well-being and environmental attitudes (Zilahy et al., 2021).

Fourthly, the use of digital technologies played an important role in facilitating communication and collaboration among different stakeholders in this study. Recent literature suggests that digital tools can also enhance the accessibility, inclusivity, and creativity of outdoor learning experiences (Carrington et al., 2020; Draper et al., 2021).

Lastly, further research is needed to examine the longer-term impacts of outdoor education and FS programmes on children's learning and development and their attitudes and behaviours towards the natural world (Barrett et al., 2018). Future research could also explore the factors that facilitate or hinder the sustainability of outdoor education programmes, including

the role of partnerships and collaborations, funding and resources, and policy and institutional support.

By building upon the insights and gaps identified in this study, future research can contribute to the development of more innovative, effective, and inclusive educational practices that promote children's learning and development in diverse contexts.

The findings of this research offer opportunities for further investigation in the field of outdoor education. Specifically, this research could benefit from a mixed-methods approach on a wider level and by enlarging its scale. In other words, the research could benefit from a broader sample that could include schools throughout the UK and more participants. International opportunities also emerge as the current research can also benefit from similar research regarding the FS context internationally. For example, it could be noteworthy to examine research regarding the FS in Greece. Through an initial exploration of the topic I made through online databases and discussions with colleagues, the venue of FS in Greece seems under-researched. The research could compare the behaviour of pupils throughout the UK when attending FS and hence capture a broader context of the FS approach. This could perhaps be investigated at a national level by local education authorities, the DfE or other researchers. The current research could also benefit from a longitudinal study of the same participants that could examine the impact of FS on young people's lives.

Additionally, it would be interesting to see if the findings of this research can be transferred to other settings, such as the children's homes or children's behaviour in the outdoors when the children are not operating in formal education. A research opportunity that derives from the current research is to examine whether the children attending FS could stimulate interest and awareness towards the outdoors for others. This research opportunity emerges by looking at the potential of FS to provide restorative effects (Kaplan, 1995) and whether the effects of FS are transferable to other settings (O'Brien and Murray, 2005), affecting others such as parents or friends of the children attending an FS.

The methodological approach used can also be of use to answer similar research questions about the involvement of participants in a specific setting, identify mechanisms of a phenomenon and answer questions regarding 'how' a phenomenon manifests, within a real-world research context. This opportunity has also been justified by the fact that the value of critical realism as the underlying framework for mixed-methods research lies in embracing a philosophy that combines both quantitative and qualitative approaches to examine and identify experienced events (McEvoy & Richards, 2006; Mingers, 2005; Wynn & Williams, 2012).

Further opportunities for research can also derive from the data of the current study, and questions still arise. For example, one of the parents who took part in the study noted in the open-ended section of the questionnaire that '*The frenzy about environmental issues is all about collecting taxes for the CO<sub>2</sub> we produce*'. Perhaps It would be worth exploring whether there is a belief that environmental awareness is linked to taxation. Furthermore, another parent seemed confused about environmental education and traditional education. As the questionnaire included questions about both outdoor education and environmental education, the parent noted that environmental education should not replace traditional education. Perhaps the parent confused environmental education with outdoor education. The parent could have also meant that environmental education is not related to traditional education. Hence it would be useful to revisit the participant and ask for elaborative remarks. Additionally, the same parent directly linked the role of education to a measurable exam-related outcome and by doing so, seemed to suggest that children do not need "*to be trained to cope with traditional environments*". Therefore it would be interesting to check for further indications of the existence of an exam-centric popular belief regarding education's role in the UK.

At the moment, possibilities for publications in independent journals or post-doctoral research opportunities deriving from the current research findings are being explored. However, I am eager to present the current study at research conferences related to outdoor education and inclusion, such as the 'education outdoors conference(s)' in Victoria, Canada and disseminate the research findings. Furthermore, I am currently working with members of the supervisory team towards a publication that examines popular views of stakeholders in education regarding the use of outdoor education in inclusive practices.

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# Appendix

## Appendix 1. Participants information sheet (Focus group)



Anglia Ruskin  
University

Cambridge Chelmsford Peterborough

### PARTICIPANT INFORMATION SHEET

#### Section A: The Research Project

- 1. Title of project**  
Special Education through Environmental Education; means and methods of an effective inclusion.
- 2. Purpose and value of study**  
The main purpose of this research is to examine how parents in this school perceive the role of Environmental Education in the official as well as the hidden curriculum. The research will also intend to examine the preferred methodology used, on an educational environmental program, as well as, to investigate the impact Environmental Education has in the teaching process with the intend to point out barriers that might occur. The focus group will also let parents reflect and give constructive feedback on the previously submitted survey by commenting on the emerging themes.
- 3. Invitation to participate**  
You are invited to take part in a focus group in which you will share your experiences and views as parents of students who take part in educational environmental programs in their school.
- 4. Who is organising the research?**  
The study is being conducted by Alex Stavrianos, a research student in ARU, and is supervised by Prof. Tim Waller and Dr. Paulette Luff who are both members of academic staff in the Faculty of Health, Social Care and Education (FHSCE) at Anglia Ruskin University.
- 5. What will happen to the results of the study?**  
We intend to present and discuss the results of the study at a presentation in Campus for professionals and students. We also hope to publish the findings in an article in an academic journal. The data collected will also appear on a PhD thesis.
- 6. Who is funding the research?**  
This research is being funded by a full studentship, for an Mphil/PhD, from Anglia Ruskin University.
- 7. Contact for further information**  
If you have any questions or would like any further information about this project, please contact the researcher, Alex Stavrianos, by email: [as1586@student.anglia.ac.uk](mailto:as1586@student.anglia.ac.uk) by telephone: [REDACTED] or by post at Alex Stavrianos, Anglia Ruskin University, Cambridge Campus, East Rd, Hel. 308, Cambridge CB1 1PT.

## Section B: Your Participation in the Research Project

**1. Why you have been invited to take part:**

You have been invited to take part in this study because you are the parents of students in an eco-school setting in which environmental education is used.

**2. Whether you can refuse to take part:**

Participation in the study is entirely optional.

**3. Whether you can withdraw at any time, and how:**

If you agree to take part in the study, but later change your mind, you can withdraw by informing the researcher, Alex Stavrianos (details above). There is a short form at the bottom of the consent letter that you have been given with this information sheet that you can sign and return by hand or by post (address above).

**4. What will happen if you agree to take part?**

We would like to invite you to take part in a focus group, which is a group of people assembled to participate in a discussion about a specific context. At this focus group, the researcher and other parents will be present. Staff members, from Anglia Ruskin University or from the school might be present. In more detail, you will be asked to participate to a 40 minute focus group concerning your opinions and experiences about the educational programs run in your children's school. The topics you will discuss will be based on a questionnaire parents of the same school answered in 2014. The focus group will take place only once. The focus group will take place on school premises. The day and time of the focus group will be agreed in accordance with participants' availability. The focus group will be digitally recorded, with an audio recording device and will be conducted by the researcher as follows:

- The researcher will explain your rights as participant, the aims of the focus group and rules to ensure a positive and positive experience
- Key issues will be introduced for you and the other parents to discuss

General rules for the discussion:

- ✓ Be polite
- ✓ Respect children's privacy by referring to them in an anonymous way
- ✓ Respect other participants' privacy

No more than six people will be invited to take part. If more than six consent forms should be returned, the final participants will be randomly selected from those who returned the consent form.

**5. Are there any risks involved - and what will be done to ensure your wellbeing?**

We hope that taking part in the study will be an enjoyable experience. We will aim to be considerate and will be careful not to intrude on your lifestyle though sensitive questions, make you feel uncomfortable in any way or take up your time unnecessarily.

**6. In the unlikely event that something should go wrong, agreement to participate in this research should not compromise your legal rights.**

**7. What will happen to any information/data/examples that are collected from you / your setting?**

Any notes or copies of information that you give to us will be kept carefully and securely in a locked filing cabinet. Audio files will be downloaded onto a password protected area of a work (university) computer, accessible only to the researching team. Primary Data collected from this focus group will be destroyed in January 2018.

**8. Are there any benefits from taking part?**

The main benefits of this study for educational practitioners, are in understanding how environmental education is used to support the curriculum and the learning process itself.

**9. How your participation in the project will be kept confidential**

All collected data (including names and contact details) will be stored safely. In reports of the study no real names will be used.

YOU WILL BE GIVEN A COPY OF THIS TO KEEP,  
TOGETHER WITH A COPY OF YOUR CONSENT FORM



## PARTICIPANT INFORMATION SHEET

### Section A: The Research Project

**8. Title of project**

Special Education through Environmental Education; means and methods of effective inclusion.

**9. Purpose and value of study**

The research will be an investigation of the means, the methods and the impact that Environmental Education has in school and, more specifically, the impact it has on inclusive education designed for pupils with learning difficulties. The main purpose of this research is to examine the way teachers, such as yourself, perceive the role of Environmental Education in the official as well as the hidden curriculum. The research will also focus on the learning and teaching strategies that are used within an educational environmental program. It is anticipated that the completed research will have value in showing the relationships between environmental education and inclusive approaches to educating children with special educational needs.

**10. Invitation to participate**

You are invited to take part in this work in order to share with us your experiences when using educational environmental programmes in your school.

**11. Who is organising the research?**

The study is being conducted by Alex Stavrianos, a research student at ARU and is supervised by Prof. Tim Waller and Dr. Paulette Luff who are both members of academic staff in the Faculty of Health, Social Care and Education (FHSCE) in Anglia Ruskin University.

**12. What will happen to the results of the study?**

We intend to present and discuss the results of the study at a presentation on Campus for professionals and students. We also hope to publish the findings in articles in academic journals. Any presentation and publications will not identify participants. You will be given a summary of key findings when the research is completed and invited to the research presentations.

**13. Who is funding the research?**

This study is being funded by a research student bursary awarded by Anglia Ruskin University.

**14. Contact for further information**

If you have any questions or would like any further information about this project, please contact the researcher, Alex Stavrianos, by email: [as1586@student.anglia.ac.uk](mailto:as1586@student.anglia.ac.uk), by telephone: 07456 636731 or by post c/o Webb building, Anglia Ruskin University, East Road, Cambridge, CB1 2PT.

### Section B: Your Participation in the Research Project

**10. Why you have been invited to take part:**

You have been invited to take part in this study because you are an educator who uses environmental education as part of your work with children.

**11. Whether you can refuse to take part:**

- Participation in the study is entirely optional – you can choose not to participate
12. **Whether you can withdraw at any time, and how:**  
 If you agree to take part in the study, but later change your mind, then you can withdraw *either* by informing the researcher, Alex Stavrianos (details above). There is a short withdrawal form at the bottom of the consent letter that you have been given with this information sheet that you can sign and return by hand or by post (address above). You can also notify the researcher by email at [as1586@student.anglia.ac.uk](mailto:as1586@student.anglia.ac.uk)
13. **What will happen if you agree to take part?**  
 I would like to visit your school to hear about your experiences of teaching environmental education programs. At a mutually convenient time I would like to conduct an interview in order to talk about:
- Inclusion  
 Environmental Education/Education for Sustainability  
 Motivation  
 Your preferred means and methods of learning and teaching  
 Barriers to teaching Environmental Education
- The interview, which will be quite informal would be audio recorded, with your consent. I may also take some notes whilst you are talking. I would also like to do observations of 'levels of involvement' for 3 children on several visits, both in the classroom and outdoors.
14. **Are there any risks involved - and what will be done to ensure your wellbeing?**  
 I hope that taking part in the study will be an enjoyable experience. I will be considerate and careful not to intrude on your work with children and families or take up your time unnecessarily. Whatever you say to me will be treated in confidence and you will not be named in any report. You need only discuss aspects of your work that you feel comfortable to talk about and you can stop the interview at any time.
15. **In the unlikely event that something should go wrong, agreement to participate in this research should not compromise your legal rights.**  
 You could reach the research supervisory team for any concerns or complaints you might have using the following contact details:  
 Prof Tim Waller *email:* [tim.waller@anglia.ac.uk](mailto:tim.waller@anglia.ac.uk) Tel. 0845 196 2535  
 Dr Paulette Luff *email:* [paulette.luff@anglia.ac.uk](mailto:paulette.luff@anglia.ac.uk) Tel. 0845 196 3544
16. **What will happen to any information/data/examples that are collected from you / your setting?**  
 Any notes or copies of information that you give to us will be kept carefully and securely in a locked filing cabinet. Audio files and transcripts will be on a password protected file. Any data collected will be stored up until the completion of the research (approximately 3 years).
17. **Are there any benefits from taking part?**  
 The main benefits of this study are in understanding how environmental education is used to support the curriculum and the learning process itself. Discussing this may help you to reflect upon the teaching process so it can evolve and develop further.
18. **How your participation in the project will be kept confidential**  
 All collected data (including names and contact details) will be stored safely. In reports of the study no full names will be used and the school will be referred to by a pseudonym.

YOU WILL BE GIVEN A COPY OF THIS TO KEEP,  
 TOGETHER WITH A COPY OF YOUR CONSENT FORM



## PARTICIPANT INFORMATION SHEET

### Environmental Education and Inclusion Research Project

Dear Parents,

My name is Alex Stavrianos and I am studying for a PhD at Anglia Ruskin University in Cambridge. I am a qualified and experienced teacher from Greece and my research involves investigating the curriculum for environmental education. It is anticipated that the completed research will have value in showing the relationships between environmental education and inclusive approaches to educating children, particularly those with identified special educational needs. As part of the research project I shall be visiting your child's school during this academic year and hope to include lessons and outdoor activities involving all children in Year 3 and Year 4.

You are invited to agree for your children to take part in this study in order for them to share their experiences as students who take part in educational environmental programs in their school. (Please see the separate **Consent Form**)

This study is being funded by a research student bursary awarded by Anglia Ruskin University and the study is being supervised by Prof. Tim Waller and Dr. Paulette Luff who are both members of academic staff in the Faculty of Health, Social Care and Education (FHSCE) at Anglia Ruskin University. We intend to present and discuss the results of the study at a presentation on Campus for professionals and students. We also hope to publish the findings in articles in academic journals. Any presentations or publications will not identify participants.

#### Contact for further information

If you have any questions or would like any further information about this project, please contact the researcher, Alex Stavrianos, by email: [as1586@student.anglia.ac.uk](mailto:as1586@student.anglia.ac.uk), by telephone: [REDACTED] or by post at Helmore 308, Anglia Ruskin University, East Road, Cambridge, CB1 2PT.

#### Your Participation in the Research Project

**19. Why you have been invited to take part:**

You are being invited to agree for your children to take part in this study because you are the parents of students in an eco-school setting in which environmental education is being regularly taught.

**20. Whether you can refuse to take part:**

Participation in the study is entirely optional – you can choose not to participate. There will be no impact on the child if you choose not to participate.

- 21. Whether you can withdraw at any time, and how:**  
If you agree to let your children take part in the study, but later change your mind, you can withdraw *either* by informing the researcher, Alex Stavrianos (details above). There is a short form at the bottom of the consent letter that you have been given with this information sheet that you can sign and return by hand or by post (address above). There will be no impact on the child if you choose to withdraw.
- 22. What will happen if you agree for your child to take part?**  
I would like to do observations of some environmental lessons and outdoor activities in the school.
- 23. Are there any risks involved - and what will be done to ensure your wellbeing?**  
We hope that taking part in the study will be an enjoyable experience. We will aim to be considerate and will be careful not to intrude on your or your children's lifestyle though sensitive questions, make you feel uncomfortable in any way, or take up your time unnecessarily.
- 24. In the unlikely event that something should go wrong, agreement to participate in this research should not compromise your legal rights.**

You could reach the research supervisory team for any concerns or complaints you might have using the following contact details:

Prof Tim Waller *email:* [tim.waller@anglia.ac.uk](mailto:tim.waller@anglia.ac.uk)

Tel. 0845 196 2535

Dr Paulette Luff *email:* [paulette.luff@anglia.ac.uk](mailto:paulette.luff@anglia.ac.uk)

Tel. 0845 196 3544

- 25. What will happen to any information/data/examples that are collected from you / your setting?**  
Any notes or copies of information collected will be kept carefully and securely in a locked filing cabinet. Any data collected will be stored up until the completion of the research (approximately 3 years).
- 26. Are there any benefits from taking part?**  
The main benefits of this study are in understanding how environmental education is used to support the curriculum and the learning process itself. The research will also help the school to assess the teaching methods that are being used and to consider any barriers that might occur in the learning process. The children will benefit from the process in various ways. Examples of these could be: increasing their level of awareness in their school's environmental program, gaining experience by taking part in a research in education, increasing their self-confident and self-motivation.
- 27. How your child's participation in the project will be kept confidential**  
All collected data (including names and contact details) will be stored safely. When the research is concluded the data collected will be destroyed. In the observations and reports of the study pseudonyms will be used.

YOU WILL BE GIVEN A COPY OF THIS TO KEEP,  
TOGETHER WITH A COPY OF YOUR CONSENT FORM

Appendix 4. Participants Information Sheet (Parents)  
PARTICIPANT INFORMATION SHEET



Anglia Ruskin  
University

Cambridge Chelmsford Peterborough

**Section A: The Research Project**

- 15. Title of project**  
Special Education through Environmental Education; means and methods of an effective inclusion.
- 16. Purpose and value of study**  
The main purpose of this research is to examine the way students and, teachers working in Special Education, perceive the role of Environmental Education in the official as well as the hidden curriculum. The research will also focus on the preferred methodology used, when teaching within the frame of an educational environmental program. Discuss the impact Environmental Education has in the teaching process as well as to point out barriers that might occur.
- 17. Invitation to participate**  
You are invited to be part of this work in order to share your experiences as parents of students who take part in educational environmental programs in their school.
- 18. Who is organising the research?**  
The study is being conducted by Alex Stavrianos, a research student in ARU and is supervised by Prof. Tim Waller and Dr. Paulette Luff who are both members of academic staff in the Faculty of Health, Social Care and Education (FHSCE) at Anglia Ruskin University.
- 19. What will happen to the results of the study?**  
We intend to present and discuss the results of the study at a presentation in Campus for professionals and students. We also hope to publish the findings in an article in an academic journal.
- 20. Who is funding the research?**  
This research is being funded by a full studentship, for an Mphil/PhD, from the Anglia Ruskin University.
- 21. Contact for further information**  
If you have any questions or would like any further information about this project, please contact the researcher, Alex Stavrianos, by email: [as1586@student.anglia.ac.uk](mailto:as1586@student.anglia.ac.uk) by telephone: [REDACTED] or by post at 35 City Road, Cambridge CB1 1DP.

**Section B: Your Participation in the Research Project**

- 28. Why you have been invited to take part:**  
You have been invited to take part in this study because you are the parents of students in an eco-school setting in which you environmental education is used.
- 29. Whether you can refuse to take part:**  
Participation in the study is entirely optional – you can refuse to take part
- 30. Whether you can withdraw at any time, and how:**

If you agree to take part in the study, but later change your mind, then you can withdraw *either* by informing the researcher, Alex Stavrianos (details above). There is a short form at the bottom of the consent letter that you have been given with this information sheet that you can sign and return by hand or by post (address above).

- 31. What will happen if you agree to take part?**  
We would like pass a questionnaire for you to fill in through your children school.
- 32. Are there any risks involved - and what will be done to ensure your wellbeing?**  
We hope that taking part in the study will be an enjoyable experience. We will aim to be considerate and will be careful not to intrude on your lifestyle though sensitive questions, make you feel uncomfortable in any way or take up your time unnecessarily.
- 33. In the unlikely event that something should go wrong, agreement to participate in this research should not compromise your legal rights.**
- 34. What will happen to any information/data/examples that are collected from you / your setting?**  
Any notes or copies of information that you give to us will be kept carefully and securely in a locked filing cabinet. Digital photographs and audio files will be downloaded onto a password protected area of a work (university) computer, accessible only to the researching team.
- 35. Are there any benefits from taking part?**  
The main benefits of this study are in understanding how environmental education is used to support the curriculum and the learning process itself.
- 36. How your participation in the project will be kept confidential**  
All collected data (including names and contact details) will be stored safely. In reports of the study no full names will be used.

YOU WILL BE GIVEN A COPY OF THIS TO KEEP,  
TOGETHER WITH A COPY OF YOUR CONSENT FORM

## Appendix 5. Participants consent form

### PARTICIPANT CONSENT FORM

**Name of Parent/Guardian:**.....

**Title of the project:** *Special Education through Environmental Education; means and methods of an effective inclusion*

**Main investigator and contact details:** Alexandros Stavrianos  
Anglia Ruskin University  
East Road, Hel. 308  
Cambridge CB1 1PT  
[REDACTED]

**Members of the research team:**

First Supervisor: Prof Tim Waller (email: tim.waller@anglia.ac.uk)

Second Supervisor: Dr Paulette Luff (email: paulette.Luff@anglia.ac.uk)

1. I agree to take part in the above research. I have read the Participant Information Sheet which is attached to this form. I understand what my role will be in this research, and all my questions have been answered to my satisfaction.
2. I understand that I am free to withdraw from the research at any time, for any reason and without prejudice.
3. I have been informed that the confidentiality of the information I provide will be safeguarded.
4. I am free to ask any questions at any time before and during the study.
5. I have been provided with a copy of this form and the Participant Information Sheet.

Data Protection: I agree to the University<sup>1</sup> processing personal data which I have supplied. I agree to the processing of such data for any purposes connected with the Research Project as outlined to me.

Name of participant (print).....Signed.....Date.....

-----  
If you wish to withdraw from the research, please complete the form below and return to the main investigator named above.

Title of Project:  
I WISH TO WITHDRAW FROM THIS STUDY

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

\_\_\_\_\_  
<sup>1</sup> "The University" includes Anglia Ruskin University and its partner colleges

## Appendix 6. Ethical approval for research

04 October 2013



**Anglia Ruskin  
University**

Cambridge & Chelmsford

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Fm: +44 (0)1223 353271  
[www.anglia.ac.uk](http://www.anglia.ac.uk)

Alexandros Stavrianos

Dear Alexandros,

**Re: Application for Ethical Approval**

**Project Number:** 13/016  
**Project Title:** Special Education through Environmental Education; means and methods of effective inclusion  
**Principal Investigator:** Alexandros Stavrianos

Thank you for your application for ethical approval which was considered by the Faculty (of Health, Social Care & Education) Research Ethics Panel (FREP), by Fast Track Ethical Review, w/c 30<sup>th</sup> September 2013.

I am pleased to inform you that your research proposal has been approved by the Faculty Research Ethics Panel under the terms of Anglia Ruskin University's *Policy and Code of Practice for the Conduct of Research with Human Participants*. Approval is for a period of three years from 4 July 2013.

It is your responsibility to ensure that you comply with Anglia Ruskin University's Policy and Code of Practice for Research with Human Participants and specifically:

- The procedure for submitting substantial amendments to the Panel, should there be any changes to your research. You cannot implement these changes until you have received approval from FREP for them.
- The procedure for reporting adverse events and incidents.
- The Data Protection Act (1998) and any other legislation relevant to your research. You must also ensure that you are aware of any emerging legislation relating to your research and make any changes to your study (which you will need to obtain ethical approval for) to comply with this.
- Obtaining any further ethical approval required from the organisation or country (if not carrying out research in the UK) where you will be carrying the research out. Please ensure that you send the FREP Secretary copies of this documentation.

## Appendix 7. Extension to ethical approval



Anglia Ruskin  
University

Cambridge Chelmsford Peterborough

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[www.anglia.ac.uk](http://www.anglia.ac.uk)

Ref: JH-T/pmx/AS-13/016  
Enquiries: Pamela Maxwell  
Direct Line: 01245 684820  
Date: 4 December 2013

Alexandros Stavrianos

Dear Alexandros,

**Re: Application for Ethical Approval**

**Project Number:** 13/016

**Project Title:** Special Education through Environmental Education; means and methods of effective inclusion

**Principal Investigator:** Alexandros Stavrianos

Thank you for your request by email dated 05 November for an extension to your original ethical approval which was considered by the Faculty (of Health, Social Care & Education) Research Ethics Panel (FREP) at its meeting on 13 November 2013.

I am pleased to inform you that your extension has been granted by the Faculty Research Ethics Panel under the terms of Anglia Ruskin University's *Policy and Code of Practice for the Conduct of Research with Human Participants*. Extension is granted for a period of one year from 13 November 2013.

Please note the following:

- The Panel requires you to use your student Anglia Ruskin email account and not a personal email address.
- You will shortly receive from your Supervisor some examples of the type of Consent forms we would like you to use.
- The Participant Information Sheet (PIS) is a little broad and this will need to be proof read and revised together with your Supervisor.

The above points are for discussion with your Supervisor and do not require a response to FREP.

It is your responsibility to ensure that you comply with Anglia Ruskin University's *Policy and Code of Practice for Research with Human Participants* and specifically:

- The procedure for submitting substantial amendments to the Panel, should there be any changes to your research. You cannot implement these changes until you have received approval from FREP for them.



**The ‘Environmental Education: means and methods of an effective inclusion’ research project.**

My name is Alex Stavrianos and I am a research student at Anglia Ruskin University.

I would be very grateful if you would take a few moments to complete the online survey – it should take no longer than 14 minutes.

The aim of this research is to investigate the impact of Environmental Education on pupils’ development in the official, as well as the hidden curriculum. The main questions I am investigating are:

- What is the impact of Environmental Education?
- How effective is the learning process?

My project is supervised by Prof. Tim Waller and Dr. Paulette Luff, who are both members of academic staff in the Faculty of Health, Social Care and Education (FHSCE) at Anglia Ruskin University.

Our intention is to present and discuss the findings of the study at seminars on campus for professionals and students. Any publications will not identify participants. Participation in this study is entirely optional, you may choose not to participate.

The main benefits of this study are in understanding how environmental education is used to support the curriculum and the learning process itself. The research will also help the school as well as its pupils to evaluate the teaching programs that are being used and to consider any barriers that might occur in the learning process in order to be able to overcome them. It is hoped that parents will be benefited through increasing their level of awareness regarding the environmental educational curriculum of their child’s school.

We hope that taking part in the study will be an enjoyable experience. We aim to be considerate and will be careful not to intrude on your personal life with sensitive questions, make you feel uncomfortable in any way or take up your time unnecessarily.

If you have any questions or would like any further information about this project, please contact the researcher, Alex Stavrianos, by email: [as1586@student.anglia.ac.uk](mailto:as1586@student.anglia.ac.uk), by telephone: 07456 636730 or by post at Helmore 308, Anglia Ruskin University, East Road, Cambridge, CB1 2PT.

**A. General Information**

\_[Please mark as appropriate]

i. Your age:

Under 21, 21-29, 30-39, 40-49, 50-59, 60+

ii. Female or Male

iii. Mother/Father Other [Please state]

iv. Highest Educational Qualification

**B. General Questions**

**Q1. My child is informed about environmental Issues from:**

*(mark from 1 to all factors you consider to be valid with a ✓ in the appropriate box)*

<input type="checkbox"/> school	<input type="checkbox"/> family
<input type="checkbox"/> television	<input type="checkbox"/> Internet
<input type="checkbox"/> newspapers and magazines	<input type="checkbox"/> Friends
<input type="checkbox"/>	Other? Which? .....

**Q2. To what degree you agree/disagree with the following statements? (Evaluate each statement separately by marking with a ✓ in the appropriate box)**

	I strongly agree	I agree	I disagree	I strongly disagree
I would rather my child to be taught in an outdoor setting.				
Environmental Education can help my child develop attributes which will help them professionally in future				

Outdoor Education can be as beneficial as Indoor Education				
Environmental Education can be directly linked to formal Education				

C. Strengths and Difficulties

**Q3. For each item, please mark the box for Not True, Somewhat True or Certainly True. It would help us if you answered all item as best as you can, even if you are not absolutely certain or the item seems daft! Please give your answers on the basis of the child's behaviour over the last school year.**

<b>My child seems:</b>	<b>Not True</b>	<b>Somewhat True</b>	<b>Certainly True</b>
<b>Considerate of other people's feelings</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Restless, overactive, cannot stay still for long</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Often complains of headaches, stomach-aches or sickness</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Shares readily with other children (treats, toys, pencils, etc)</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Often has temper tantrums or hot tempers</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Rather solitary, tends to play alone</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Generally obedient, usually does what adults request</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Many worries, often seems worried</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<b>Helpful if someone is hurt, upset or feeling ill</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Constantly fidgeting or squirming</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Has at least one good friend</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Often unhappy, down – hearted or tearful</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<b>Generally liked by other children</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Easily distracted, concentration wanders</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Nervous or clingy in new situations, easily loses confidence</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<b>Kind to younger children</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Often volunteers to help others (parents, teachers, other children)</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Thinks things out before acting</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Gets on better with adults than with other children</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Many fears, easily scared</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Sees tasks through to the end, good attention span</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Perceived views**

**Q4. How well informed are you of any Environmental Educational Programs that run in your child's school? [1=very informed, 4=uninformed]**

1234

**Q5. How important is Environmental Education for your child's overall education? [1=very important, 4=unimportant]**

1234

**Q6. How effective do you believe Environmental Education is for your child? [1=very effective, 4=ineffective]**

1234

**Q7. How beneficial you believe Environmental Education to be for your child? [1=very beneficial, 4=not beneficial]**

1234

**Q8. Do you believe that Outdoor education can promote inclusion in schools?**

Yes  No

**Q9. What changes have you seen in your child's behaviour after their participation in Environmental Education Program?**

**Impact**

Q10. Overall do you think that your child has any difficulties in one or more of the following areas: emotions, concentration, behaviour or being able to get on with other people?

No  Yes- Minor difficulties  Yes-Definite difficulties  Yes-severe difficulties

Q 11. If you answered "Yes", please answer the following questions about these difficulties:

a. How long have these difficulties been present?

Less than a month  1-5months  6-12 months  Over a year

b. Do the difficulties upset or distress your child?

Not at all  Only a little  Quite a lot  A great deal

c. Do the difficulties interfere with your child's everyday life in the following areas? [mark each section individually by filling in the table with a ✓ in the appropriate box]

	Not at all	Only a little	Quite a lot	A great Deal

Home Life				
Friendships				
Classroom Learning				
Outdoor Learning				
Leisure Activities				

e. Do the difficulties put any burden on you or the family as a whole?

Not at all

Only a little

Quite a lot

A great deal

Q12. Would you like to add a comment about Environmental Education or give feedback on this questionnaire?

Thank you for completing this survey.

## Appendix 9. Observational tool

### Levels of Involvement Observation Schedule

Date 19/02/2014 Student (Y3LDB) Location Indoors

Time (2 minutes from...to....)	Indicators of Involvement		Activity	Comments
9.45-9.47	Concentration	3	Writing a story	Talking with his 1:1 support about the story he's writing
	Energy	4		
	Complexity and creativity	3		
	Facial expression and posture	4		
	Persistence	3		
	Precision	3		
	Reaction time			
	Language	3		
	Satisfaction	3		
	<b>Overall level of involvement</b>	<b>3</b>		

## Appendix 10. Example of thematic analysis

### **Name:** barriers

<Internals\Interviews\ > - § 10 references coded [23.93% Coverage]

Reference 1 - 2.03% Coverage

¶42: It's not a damaging one but it could be far more beneficial if they did more of it. Yeah, there is... until the children are used to being outside, they don't adjust quickly enough to learn from it. They spend all they're e time adjusting to it, not actually learning from it, which is you know, quite difficult.

Reference 2 - 3.42% Coverage

¶46: Time within a very crowded curriculum to actually spend the time outside. Sometimes dress is a huge issue because the children are not used to learning outside and they don't dress properly and also the biggest barrier is to ordinary teachers doing it is lack of experience and lack of flexibility that when conditions aren't perfect you've got to rethink what you're going to do. You know, it's no good wanting to do say environmental art when it's poring with rain, you've got to think about something else, you've got to

Reference 3 - 1.30% Coverage

¶48: I would if they've got the flexibility to make it fit in with what they're programme is you know? You can... I don't know, I don't know where you're from... teachers are very constrained these days into...

Reference 4 - 0.69% Coverage

¶52: Yeah, yeah... I hank children know all about bullet points, they don't really know how things actually work

Reference 5 - 2.64% Coverage

¶56: Children that don't get success in the class room... who's skills are not recognised as important within the ordinary class room activity often shine outside. A lot of children find the confines... physical confines of a class room very difficult to cope with. I mean, it's not natural is it? You don't share your bedroom with 15 other people do you and that's the bottom line, you don't you know and...

## Appendix 11. Criteria for green flag award

Figure 16 Criteria for Green Flag, figure adapted from <http://www.greenflagaward.org.uk/media/1019/green-flag-award-guidelines.pdf>

# The Green Flag Award

## Criteria

A successful Green Flag Award site demonstrates through a sound management plan and a well-run site that the management understand:

- + **their users** – who they are, who they could be, what they want, how they are informed and involved
- + **their site** – what is special about its history, biodiversity, landscape, social and physical setting, and what it is trying to achieve
- + **their management strategy** – that what is there is safe, in line with legislation and policy, well maintained and that there are plans for the future

A green space is never finished – it needs to reflect and respond to the changing needs of its users, whilst retaining its character. The Green Flag Award is looking for continual improvement, hence the strapline 'raising the standard'. This is reflected in the scoring line used in the judging process. See the diagram below.

A green space should be striving to achieve a good level of management in all areas.

For example, in the area of horticultural management, a 'good' standard would require all horticultural elements to be managed in line with recognised horticultural practice – plants

to be in good condition and everywhere clearly looked after. An 'excellent' standard would only be awarded to a site with exemplary horticultural techniques displayed throughout, understood by all staff, and accompanied by a clear plan of both how this standard would be maintained in future years and why.

It may be that a site is demonstrating a good or excellent standard in all but one or two areas. To gain and retain the Green Flag Award, it would be expected that these areas are clearly identified in the management plan alongside a coherent strategy for development. Judges may make the Award, but with clear recommendations for improvement, to which applicants would be required to respond in subsequent assessments.

Applicants are judged against 27 different criteria divided into eight sections. These are not a list of requirements – the strength of the Green Flag Award is that it provides a framework for good management that professionals can evaluate and apply to their own particular site. For some sites, some of the sub-criteria will be 'not applicable' and for every site their proportionate importance will vary widely. This approach provides a clear but flexible framework for current management and future planning, and helps to make a case for funding, proving the value of the site to the community that it serves (often in ways that are otherwise difficult to quantify) and recognising the hard work of staff and volunteers.

## Judges scoring line

0/1	2/3/4	5/6	7	8	9	10
Very poor	Poor	Fair	Good	Very Good	Excellent	Exceptional



## Appendix 12. Sample of interview transcripts

TRANSCRIPT: f 002.

(I) = INTERVIEWER.

P) = PARTICIPANT.

(I) ... would you state your name and your role in the school please?

P) My name is NAMEDELETED and I'm the deputy head and year four teacher.

(I) Alright. Well thank you very much for participating in this discussion. Would you mind telling me how you perceive the role of environmental education in NAMEDELETED?

(P) I think the school has... our eco-policy is high priority. We have a special group of governors that are working on this, not just environmental issues but in saving money for the school as well in terms of things like double glazing the windows. So it's environmentally friendly but also saving us money and we also have a big push on forest school and using the outdoor area and teachers, where possible, now are trying to take lessons outside rather than staying inside.

(I) Right, so how are the parents responding to the environmental curriculum regarding forest school?

(I) The parents have been really enthusiastic about forest school. When year four did it, we had four parents come in to help and... This school are very supportive and when we have outdoor learning and we want parents to come in and they always come and help, they make sure the children are dressed appropriately and I think the parents of this school are very much... they all sort of hold the same environmental ethos, which other schools might not have so much but definitely parents here are very supportive of it.

(I) ... voluntarily?

(I) Yeah, voluntarily and at parents evenings they always mention how much the children have enjoyed it and yeah...

(I) So.. you don't have any issues or problems with the parents?

(P) No... in terms of being outside and getting dirty clothes and things like that? We invited the parents to come for a workshop. So, the parents came in without the children and that was led by Forest school teacher, DELETED, who comes in once a

week to the school and she kind of talked to them and showed them practically the benefits of this and they were really, really supportive... once they done that, they were really, really supportive and they made sure the children were really kitted out well for it. I mean, the parents have been really supportive and I think that's what has helped by having that workshop initially and being, you know the benefits of it. So, the parents quickly came on board and on side really. Once they understand it...

(I) What's so good about the outdoors?

(P) I think what's nice about a lot of the stuff is that it's accessible to lots of children and particularly with a lot of the outdoors stuff it can appeal particularly to children who learn better in an outdoor environment rather than being in the class room. They want to achieve because they're actually really enjoying being out and having a difference in their environments and feeling that... there's a lot more I suppose a case of it's not so right and wrong when your outside, it's very experimental, it's very much sort of trial and error and thinking about how you can get somewhere and how you do things and you're not confirmed to a desk and just having to use your brain

(I) Do you find that the children are motivated in participating?

(P) Yes, the children absolutely love it. Take them outside the class room and they love it, yeah.

(I) Right so who's less anticipated to... who's less motivated to take part in environmental education?

(P) I don't think anyone's less motivated in the environmental theme but there are some children who just don't like being dirty and being outside. Some of my girls, after a while start to moan that they're cold or they don't like to get muddy or wet or things like that but with a bit of encouragement they are ok and it really benefits my lower-ability children who are very practical and hands-on and I feel that they can learn a lot more by going outside and actually doing things. The school's just recently invested in about one hundred sets of waterproof trousers and we're trying to find a way to have children's welly boots in school all the time to make sure we are equipped to go out in all the weather conditions but there's some children and teachers who would rather not go outside when it's wet or muddy and... So I just think it does have an impact and that we're willing to educate children to know that they are actually important in all of this and I've just been taking the year five class who are starting a campaign to save a national park in Africa from an oil company who wants to drill you know, they're so motivated by it all and they feel the responsibility that everybody should feel and I think because they are the future generation and it's a massive factor for them, we just have to make sure they are all understanding they can do their bit and the impact of it all, so...

(I) How would you describe the inclusion [1 WORD NOT CLEAR] (2.20) you used regarding special educational needs children?

(P) I think all of the children are able to take part in the outdoor learning. We don't have... we don't have any children with disabilities I know in year four or in the rest of the school that I know of. All the children take part in forest school, so their all included. Yeah, it's not really an issue.

(I) Ok, are there any often typical barriers in and out of a training module?

(P) So I think what we could do with is having... well, teachers being educated in it so that the teachers can actually feel confident that they could do all these things in the areas of the curriculum you can take outside. There are ways and there are means.

(I) Would the weather conditions be a factor?

(P) It's shown us this year that we can overcome that. We weren't prepared for Forest school... this year we wanted the children to be able to access the outside area all the time. We're quite lucky here, we're quite an affluent area here that you know, children are quite privileged here... we don't have many children on free school meals or anything like that. So, we've kind of requested that the children bring in the resources they need. So, Wellington boots and waterproof jackets... sometimes they forget them but we know they have them on, so what we did to make sure they can access... we bought waterproof trousers for the whole cohort, so that wouldn't be a barrier for us and yeah, sometimes children don't like going outside when it's cold but they realise... I think seeing the whole year through I think they've realised the changes in the environment and it will be very interesting to see next year if they feel that way again in winter will they see as... no, this is a site... the warmer will come and these are the changes. It can be a barrier because children when they're starting out I think... it's all about... the kind of perspective sort of things and how confident they feel but I think living through it I think they quickly overcome that I think.

(I) Now, how do the children react to the green flag status you have a...?

(P) I think they're really excited about it...

(I) Yeah?

(P) ...we had a big photo on the playground of everybody that went into the newsletter, in the newspaper and I think they're all used to using the language of eco and things like that, so I think it's a big priority in the school.

(I) They do take part weekly with environmental educational programmes?

(P) Yes.

(I) They have an eco-committee?

(P) Yes, there's eco-committees and two children in each class that take part in that and then next week, we are doing a climate challenge and things like that. So, maybe once or twice a term, we have an eco-environmental challenge.

(I) Have you met any interest from neighbours or...?

(P) Not as far as I'm aware of but I think you'd have to ask DELETED about that or the governors...

(I) Ok.

(P) ... but I don't think we've had any opposition from anyone in terms of being outside if that's what you mean using the outdoor area. Not as far as I know.

(I) Ok and now is there any impact on the nearby society?

(P) Again, I'm not one hundred percent sure about that but I haven't heard that there have been any problems.

(I) Ok.

(P) I know that last year they had a problem where a homeless man set up his tent in the forest area.

(I) Here?

(P) Yeah.

(I) Oh really? I didn't know that.

(P) Yeah. Luckily, the tent was spotted straight away and the police were called and they had to remove the tent and the belongings. So, that's the only issue I've known but having that outdoor space that someone managed to get in there and thought it might be a nice place to set up a camp...

(I) ... that's pretty weird. I mean, I only saw you had like fences and it was well protected, no?

(P) Yeah. I don't know how he got in, it must have been from the back, not from the school because he wouldn't have been able to come through the school entrance. So, it was from the Lammas land where the field is, I think he'd managed to get around the back but I don't think that will be an issue now.

(I) Oh ok. Do you find the forest school running in the school beneficial to [1 WORD NOT CLEAR] (6.03) to learn?

(P) Yes, definitely and whenever there's a session available the teachers are almost fighting over who can get it. You know, if we say there are two slots available, who would like it, everybody wants it because it's brilliant.

(I) Are there no children with known special educational needs?

(P) Do you mean in terms of physical disabilities?

(I) In terms of learning difficulties.

(P) Learning difficulties? Yes we have about 12 children in the school that are classified as special needs.

(I) In year four?

(P) In year four we have three.

(I) Ok. Could you describe any difficulties they have?

(P) So, generally they have difficulties with retaining information. So they will learn something, they will be able to do it that day and then maybe the next day they won't remember how to do it or the next week they won't remember how to do it. They're generally behind with their peers...

(I) They don't have any diagnosis though?

(P) Not specifically. You've got one has just been diagnosed as dyslexic and it's just in terms of, it's called global delay, which just means you're behind the other children in your class in terms of levels for writing and maths and reading.

(I) But they don't have any difficulties participating equally in forest school?

(P) No.

(I) Do you think that's beneficial for them?

(P) Definitely.

(I) The whole procedure?

(P) Yeah, yeah.

(I) Being outdoor or...?

(P) I think we tend to find that special needs children are kinaesthetic learners. So, instead of just sitting there listening to the teacher, they can actually go out and do things and will likely to remember and learn. So for example, in maths if we were doing counting on a number line, if you take those children outside and have a number line and they can actually jump on the number line and then moving and doing things outside, they're more likely to remember it than if they're sat in some class room writing it down with a pencil. Does that make sense?

(I) Yeah.

(P) Yeah?

(I) So, can you tell me how many years have you been [2 WORDS NOT CLEAR] (8.57) seeing outdoor education in the school?

(P) I've only been here since September...

(I) ... ok...

(P) ... so, I've only seen it since then but my last school in DELETED we had a forest school teacher who was there permanently and took out groups every single day. So, it actually happened a lot more than it does here. So, that was really interesting because we had some very difficult challenging children and they would go out, it was more of a kind of social skills and they're very difficult home backgrounds. So, it was completely different to this school and I saw that had a real impact in their behaviour, so...

(I) So [1 WORD NOT CLEAR] (9.38).

(P) Yeah behaviour. They were getting into fights and things like that...

(I) You don't face any insurmountable problems here?

(P) No, we don't have that here, no.

(I) Ok. Is there anything else you'd like to add or ask?

(P) No, I don't think so.

(I) Ok. Well, thank you very much.

(P) That's ok. Do I keep this then?

(I) Yeah, you can keep it... [END]

TRANSCRIPT: rec001 DELETED year three school teacher.

(I) = INTERVIEWER.

P) = PARTICIPANT.

(I) So, thank you very much for participating. Could you please say your name and role in the school?

P) Yeah, it's DELETED and I'm the year three teacher.

(I) That's great. Do you have... how many years of experience do you have?

(P) I'm in my third full teaching year at the moment. So, I've done three years basically and then before that I did a lot of supply for a couple of years. So about five years in class rooms and stuff.

(I) So, Have you participated in other learning?

(P) I... before I started doing like teacher work sort of in the class room, I was a trained youth worker and I did a group called DELETED and they're very outdoor based and it's all very eco-based. So, yeah I've had a lot of experience, I grew up in it as well and I was a leader in it. So, I've had a lot of experience within groups that focus everything on outdoor activities and I also within school have done various things to do with eco as well. the forest school teacher in DELETED, it was a man and he used to take groups of boys out into the forest area and they would build things together so they'd be sawing and cutting and nailing and they'd have to work together as a team to come up with you know, to create something and we found that really helped the issues that they were having kind of at lunchtimes and break times when they were fighting and arguing and things like that, where they actually had to work together and they really enjoyed doing it so they knew they had to behave to be able to do it but it had a real good impact.

(I) What kind of activities have you had your class participating?

(P) My class? We do a lot to do with forest school. So we've done about four or five activities where they had a look at different environmental things but within the wooded area. So, that group helped tidy up the area, so conversation projects within it. They've also done various science projects within it looking at habitats, making things up, bug hotels down there. So, we've done everything to do with that with this class at the moment. They're doing various things like we've done a lot on climate change, so we've kind of looked at the bigger environment and they have also done... there's various things at the school do like bird watching and thinking about the environment within the school as well as outside the school, so turning off lights. So, I think the whole ethos of the school is based around outdoors and considering the environment and we try and make sure we use the woodland down at the bottom and try and do outdoor learning as well. So, I do quite a lot of lessons where we use our imagination

and we go outside, the field turns into Antarctica and yeah, kind of using outside space in order to learn across the board as well.

(I) Do you find it to be beneficial for the children?

(P) Massively. I think for a lot of these children as well, when you take them outside they haven't got the constraints of the four walls and they relax because I don't think they feel they've got pressure to achieve and get right in the same way. You can use all sorts of different skills when you're outside.

(I) Is it beneficial to all the children?

(P) All the children? Yes, I think...

(I) Are they happy to take part?

(P) Massively, yeah. I haven't had, especially in this class I haven't had anyone who didn't really enjoy being outside. You know, you will get the odd exception but the rule more than anything most kids love being outside and they really enjoyed having their learning out there. Obviously there are constraints that mean you can't do everything outside but as a school we're trying to make sure that we're putting things in place to make outdoor learning more accessible. So, trying to have clothes in school to do with waterproof clothing in making sure children have outdoor shoes, so I can just suddenly go, ok we're going to take this lesson outside and it not be constrained by the weather and what's happening.

(I) Amazing.

(P) It's getting there. It's stepping, it's robots at the moment in the way like the money and things, so.

(I) Since you mentioned money what are the most common barriers in this process when the children are outdoors?

(P) I think safety is always an issue. You need to make sure that risk assessments are done and I think... and make sure there's enough adults if you're outside the school boundaries. I think behaviour can be sometimes more challenging when your outside occasionally because there aren't the four walls of the class and the children have got a lot more freedom. Having said that, when children are more motivated they are actually more likely to stay on task and you find that they do behave better in that situation. But time... time, the constraints of the curriculum sometimes. Even though you could treat the curriculum in all sorts of ways. You know, turn a maths lesson into finding fractions of certain sticks and you know, find one half the size of that, you can do all of that absolutely and I think it's more as well, the constraints are opening people's eyes to what they can do. So it's the knowledge... the knowledge and confidence of all teachers in taking their lessons outside.

(I) Are there any children you are aware of having learning difficulties?

(P) We have some children who have epilepsy, there's a little boy with a heart condition and a little girl that used to have Leukaemia but there are procedures and policies in place to look after them. So, they still take part in everything that happens outside. They will just have an adult that will be monitoring them closely. They still join in with everything.

(I) Have you found any category of children who feel less interested in taking part?

(P) There are occasionally children who aren't... maybe aren't subjected to the outdoors as much in family life, so then they are a little bit more dubious of the outdoor environment, so they might not be so confident about you know, getting muddy and getting their hands dirty and enjoying it and I think that's what's so important in school about doing it because those children that maybe don't have access to it in family life can have it at school and start to relax and enjoy the environment but we're doing a trip soon, we're going to DELETED, it's a... where the year four's stay overnight and it's all about getting outdoors and having to do... explore forests...

(I) Is the local community participating in the school activities?

(P) We get a lot of talkers come in. We're starting to make more links with the community in the sense you know, sort of starting to take trips out to the different shops and things that are here. So there's more links happening... a lot of parents are very keen who live in the area come in and do eco-projects and we've got parents that help out. We have people coming in to do different talks. So the community are involved where we can get them involved and we try and do a lot of open days where we use the outside space that we have in school. So we have a lot of various things really. We have different fete's, we had an eco-day where we had a picnic on the field and we had lots of different events going on...

(I) What does the green flag status mean for the school?

(P) ... that schools will have to become self-sustainable.. part of that will be the fact that they have this area of native plants I would think. You have to do... you have to... well, you know don't you? You have to show to get a green flag that sustainability is integrated into every area of your curriculum. So, I mean that's probably why I was asked to build a bug hotel with them. Why we make log piles... I think that would be part of it. The teacher... the teacher that does that I think is on maternity leave at the moment...

(I) Yeah, DELETED...

(I) So... environmental education it's integrated in every aspect...

(P) It has to be now, it's the law yes. Schools are supposed to be more self-sustaining... I think there's a cut-off point, 2015 I think you're supposed to be... you are supposed to show that a huge percentage of the things that you purchase are sustainably produced and purchased and you have to... I don't know what else they

have to do but that is what the Government wants the schools working towards, self-sustainability by I think 2015 they're going to look at them all again.

(I) So, how do the parents and the students react to the fact of the schools status regarding the green flag?

(P) I think that the placement area we're in the parents really like the fact that that's quite a [1 WORD NOT CLEAR] (6.54) that exists in this school and they respond... obviously some parents are more vocal and part of it than others but as a rule I would say the parents are very keen to adopt the sort of ethos that we've created. So as far as the healthy school and the healthy lunches and the recycling within school, I think parents therefore will try and encourage their children outside school to do it. So the message does get sent out because we have a lot of communication in and out of school through letters, through activities that we do, through homework's we might send just to always have that gentle reminder that it's something as a school we consider to be very important to what we're about really.

(I) Do you use the forest school often? I mean, do you have staff for...?

(P) We don't... we have, as teachers we've all received some training by a lady that comes in DELETED and she does the forest school with us. So we go along, she'll run a session in order for us to eventually to be able to take the reins and do it ourselves. I know that reception use the forest school... I think they do it quite a lot, I think they do it weekly. We don't do it as much just because the access to it and all the other stuff... sorry, this is being recorded, yes please... the access and all the other stuff to get down there is being put in place at the moment. So as far as having outdoor clothes we can just quickly grab, it's getting put together. So eventually the bigger plan is to make sure that we can just get the bags, jump in the clothes and go out. So eventually I think we will be using it a lot more than we are now, even though we are using it at the moment, it's not to the extreme that we would like it to be.

(I) Would you say it's inclusive to all the children?

(P) Yes.

(I) Even to the children with learning difficulties?

(P) Yeah massively if not more so. It's just the safety side of things that we have to consider with certain children.

(I) But they do react positively?

(P) Massively, yeah.

(I) Ok.

(P) They're not constrained and I think that is for a lot of children with any sort of learning difficulties, the fact that your trained and there's a little bit more of a ...

(I) ... freedom...?

(P) ... yeah, freedom, not quite so regimented and right and wrong approach, it's just... yeah, it's more experimental and like I say trial and error outside.

(I) You do agree that it could be used as a way of formal educating children?

(P) Yeah, yeah alongside stuff definitely. I think it's a really, really important thing that should be used more.

(I) Right, well yeah. Is there anything else you'd like to...?

(P) Not that I can think of... sorry ...

(I) Thank you very much... [END]

TRANSCRIPT: voice1

(I) = INTERVIEWER.

P) = PARTICIPANT.

(I) Do you mind if this interview is recorded?

P) No, that's fine.

(I) Thank you very much for participating... could you state your name and role in this school?

(P) My name's DELETED, I'm the reception teacher and early years coordinator.

(I) ... and how long have you been involved with environmental education?

(P) We started here... we've had a wildlife area here, so because we have the youngest children in the school, we've kind of got a long-term plan to get all children involved in Forest school and because I have the children come in straight away, we're trying to get them engrossed in that straight away. So, what we did last year, because that was my first year here, So then after that we took the children through a six-week programme... all the reception children going every week for an hour every week with a Forest school teacher and we had lots of parents support with that because they had that initial workshop they kind of knew what it was about and how enjoyable and the learning opportunities for the children and then since then because DELETED doesn't work for the school all the time because we can't manage that all the time and she's working with other years...

(I)... every Friday?

(P) ... every Friday and she's kind of working with other year groups as well. So, everybody's... we've had the most input from her in reception because you can really build the foundations of it and then she's done fewer workshops with the other year groups throughout the school, so they've got maybe two to four workshops for the other year groups and we've had about six... about 18 workshops over the year with DELETED and then we've tried to follow that through as well. So, even when she isn't here we've continued with that... children really kind of seeing the changes over the year, over the seasons changing and we go in without her and we kind of take half the class in small groups all kitted out and we kind of treat it as sometimes...very much as I said in the class room, we kind of say we have an adult-directed activity and today we wanted to do this and we give them lots of time, like we do in reception anyway, we say you can do a child-initiated thing. So, you can go and explore, give them lots of time to just be an explorer and they really enjoy that. They love that where they can

just find their own... you know, activities and things... skills they've learnt, they've been taught and they're going to apply that and you can really see that as the year goes on, that that's what they're doing but we're at the very beginning of this cycle that the first reception, you know year group doing this and it will be interesting to see what impact that has next year when they become year one's because they'll still have some workshops and we'll have the next lot of reception children. So, hopefully that will feed through they're confidence and they're understanding as they go through the school but we kind of do the bulk of it in reception to kind of get them involved as soon as possible.

(I) How many years have you been a teacher?

(P) I've been teaching for about 15 years.

(I) Fifteen?

(P) Yeah.

(I) Oh wow! Have you always been involved with outdoor training or environmental education?

(P) No, no only since coming here. I've always been interested in it but I've never had any training in it...

(I)... the school really focuses on it?

(P) The school really does and I think it's quite... it's on the headlines at the moment isn't it? Lots of schools are doing it, so it's kind of... it is something that's happening but it's really good that we have... the head teacher has got to be really behind that and kind of really pushing for that as well and I think parents when they come around... new parents because they really see it as a real feature of the school that is something that we do.

(I) How do you respond to the green flag status that the school has obtained through the...?

(P) ... the eco-status?

(I) ... and the eco-schools international organisation?

(P) I'm not sure what you said... say it again?

(I) The green flag... the school has in a [2 WORDS NOT CLEAR] (3.54) how are you responding to it? I mean, are you familiar with it?

(P) A little bit... we're kind of quite independent... not of the green flag but of our curriculum in reception is a little bit independent of the rest of the school but we're kind of involved in kind of the whole school kind of input of it. So like the recycling things and different things that have come up about the birdwatchers... we've become very involved in that and because our curriculum is a little bit freer, not so tight we can

respond to things quite quickly, even with the very young children. We can kind of make the time for that. So, when DELETED was here and she would say, you know can reception please follow up on this please maybe they've got other curriculum constraints and we have kind of got more time to work on things like that and the young children really have got that motivation haven't they and kind of really enjoy that. So, we've quite responsive to it I think.

(I) Did you notice any behavioural changes... from the students who took part or is it too early to tell?

(P) I think it's too early to tell but I have seen changes in how they respond in Forest school... there were lots of children came in who were quite anxious about being in there... not all of them... some of them obviously had exposure to it... some of them were quite anxious just about being there but as the time has gone on and you just see lots of children that were kind of holding my hand and really nervous about being out there and what they might find out there because it's so much freer and it kind of has a big input on how we use our own outside area. So, in reception, they're kind of entitled to have an outside provision all the time and many schools will have a writing table here and a painting here... almost like moving the inside, outside but I think it's being in Forest school, the children you can see how much they enjoy kind of like the real hands on the nature side of it and it doesn't need to just be you know all the things we bring... the resources we bring from inside. So, we're really allowing themselves to go into the mud and we've kind of created mud kitchens and things like that and they look so comfortable with doing that now as well and it's also had quite a big impact on how we as a staff view that outside area now and what it's for. We're planning next year to kind of develop the outside area around the reception area and reception classes and we kind of really looking at the benefits of having... creating a very natural environment for the children rather than a very man made outside environment. We'll still be able to bring resources from the inside and things that we need but we want it to be a really natural experience because we want the outside to be the outside, not, you know the inside without a roof you know. So, that's what we're hoping for next year. So, it's had implications doing the Forest school can have a knock on effect on how we see our provisions in other ways really.

(I) Are there any children with learning difficulties?

(P) No, not currently, no.

(I) Would you say outdoor training is beneficial for all kids?

(P) Oh definitely.

(I) Even those with learning difficulties?

(P) Definitely, yeah, definitely.

(I) So, from your experience, how would you say the outdoor training effects children with learning difficulties?

(P) I think it's...

(I) ... is it beneficial for them?

(P) I think it can be... obviously, it depends on the particular children's needs... since I've been doing the Forest school I've not been teaching any children with you know, special needs so I haven't got that direct experience but I can imagine... today I went to visit another child in another school who will be coming to us next year who does have special needs and her care worker, the key worker is telling us how much she enjoys the outside and how much happier she is on the outside and freer and just kind of all the experience she has out there. So, although I haven't got direct experience with that I can see the benefits of having the choice and the space and that time to explore outside as well... not so things are restricted like when you maybe do in the inside when you feel much more confined.

(I) Ok so, which would you say are the obstacles, the barriers for children to take part in a programme outdoors?

(P) There's physical development if they're needs are... you know, if they're not quite ready for that or if they're not stable enough but I think with support, then they should be able to access all of that.

(I) Who are the children who are more likely to be involved?

(P) I think it involves all children, any kind of aspect of environmental education and I think children can kind of take it at their own level. I think what's nice about a lot of the stuff is that it's accessible to lots of children and particularly with a lot of the outdoors stuff it can appeal particularly to children who learn better in an outdoor environment rather than being in the class room.

(I) Do you think an outdoor environment will replace the class room?

(P) I know you do get Forest school where everything is done on the outside and I think it would... I think it can work... I think it would be benefit some children... I think having the choice I think would still be the right way... I think where the children are given the choice of whether they want that or not.

(I) Was there an impact on the nearby society?

(P) Sorry, on the...?

(I) I mean, an impact...

(P) ... on the?

(I) ... nearby society... nearby neighbourhood?

(P) No, I don't think so because it's kind of on that side of the premises... on the other side of the premises but we were thinking of... we haven't kind of got that far yet is because we're quite privileged for an inner-city school to have space and things like that, you know not all inner-city schools have spaces like this... it's to kind of open that up to other schools and kind of be something that we could kind of offer to other organisations as well. I don't think it's had any direct impact on the locality.

(I) Ok. Is there anything else you'd like to fill in?

(P) No, I just think the whole process of this year has been a really positive one, really, really positive... it's been really good to see...go through one year through the kind of seasons of the cycle and it's been really, really good to see the children have kind of taken that on board.

(I) Thank you very much.

(P) Ok. [END]

TRANSCRIPT: voice2

(I) = INTERVIEWER.

P) = PARTICIPANT.

(I) ... so we're actually in the field where the Forest School takes place... would you mind if this conversation is being recorded?

P) No, absolutely not.

(I) Great, could you please state your name and your own direct... in the school?

(P) My name is DELETED... ok and we are at DELETED wildlife area. I am the part time Forest School leader... I am also qualified as a primary teacher, a park keeper and a garden designer ok?

(I) So, what it is it exactly that you do in DELETED?

(P) I am the Forest School leader here... that is my job title here.

(I) Could you tell me about the programme?

(P) Well, I was recruited by DELETED whom I have worked for... the head teacher here... I've worked for her for many years because we had got a programme of Forest School going in her previous school and she wanted the children here to have that experience and use the exceptional outdoor area that they have for a Forest School.

(I) DELETED is the head teacher?

(P) Yes, she is yes.

(I) So, how many years have you been doing this in general? How much...?

(P) ... I've probably been doing it for six years.

(I) Six years?

(P) ... and how much time do I do it each week? I work for four days a week.

(I) Ok.

(P) Ok and I'm based at... at the moment four different schools.

(I) Would you say a Forest School education in another environment is affecting to the learning process?

(P) Oh my gosh, yes. Yes, yes, yes... do you want to know in what ways?

(I) Yes.

(P) Well, don't we learn from first-hand experience and immediately? I mean, sitting here this afternoon, you could teach children about seed dispersal because there goes a seed. You could teach children about butterflies, there's an orange tip... look, there's quite a rare butterfly over there, an orange tip. You could teach the children about habitats... what's it on, it's on a stinging nettle... now, that means a Million things more to a child than being told that an orange it butterfly likes to live on a stinging nettle.

(I) Which years do you teach?

(P) Anything. I teach from rising four, which are the pre-schoolers up to teenagers... I have secondary children... I also do workshops for adults and I do development days for schools.

(I) So, which would you say have the most common barriers for environmental education and in particular for Forest school?

(P) Time...

(I) Time?

(P)Time within a very crowded curriculum to actually spend the time outside. Sometimes dress is a huge issue because the children are not used to learning outside and they don't dress properly and also the biggest barrier is to ordinary teachers doing it is lack of experience and lack of flexibility that when conditions aren't perfect you've got to rethink what you're going to do. You know, it's no good wanting to do say environmental art when it's poring with rain, you've got to think about something else, you've got to...

(I) So you wouldn't... you wouldn't recommend to a non-environmental teacher to plan an environmental education programme in a Forest School or in their school?

(P) I would if they've got the flexibility to make it fit in with what they're programme is you know? You can... I don't know, I don't know where you're from... teachers are very constrained these days into...

(I) ... the curriculum?

(P) ... yeah, it is very constrained...

(I)... bullet points?

(P) Yeah, yeah... I think children know all about bullet points, they don't really know how things actually work.

(I)Which barriers did you have to face for this year... for year three and four?

(P) From this years' experience, I don't think there's a particular group... I really don't... you might think is it a girl, boy thing... I don't think there... we're quite lucky

with children this year... I think they've all been equally motivated... they were a mixture of children that were a little bit apprehensive to start with but they've all overcome that now... that was a range of children, so that was girls, that was boys... you know.....?

(I) Could you tell me if the kids were motivated to be involved?

(P) I never, ever, ever raise my voice... I never think gosh, that was terrible. The children love learning outdoors... it is so easy to teach outdoors. You know, I don't understand why we don't do more of it, I really, really don't.

(I) Is there a particular type of children or are there any groups of children that you would find to be more excited about taking part in this school?

(P) Children that don't get success in the class room... who's skills are not recognised as important within the ordinary class room activity often shine outside. A lot of children find the confines... physical confines of a class room very difficult to cope with. I mean, it's not natural is it? You don't share your bedroom with 15 other people do you and that's the bottom line, you don't you know and...

(I) ... typically you know?

(P) I hope not... well, I don't know what kind of life you live but you know but that's... you imagine you know if... I don't know why we put children in small rooms and expect them to be sociable and you know, responsible you know, it's not a natural way for human beings to be is it really, especially if you want them to learn and we learn by doing.

(I) I mean, you're talking about experimental learning?

(P) Yes but so many things are so easy to explain when you have got something there to show it with. You know, you know if you were doing something even this afternoon on flight, you could just do it by watching things...

(I) ... right...

(P) ... and then you could, right let's try and make that... how could we make something move like that, it's very difficult and then again, that experience and then they realise ok when we design things to fly, they have to be specially designed... am I answering what you want? Is this what you want?

(I) Yeah, yeah...

(P) Yeah, yeah.

(I) So, in addition to this, would there be any children are less excited to take part or would they find a Forest School too intimidating or...?

(P) Let me think... some of the very intelligent children aren't as practical, so they find things difficult problem-solving things or making things because they're so used to

writing something down and learning in a different way that they're not used to the practical side of it, which is why it's important to do that as well. Some children do, yes and you have to let them experience it slowly, don't push them too hard. Some children find it quite frightening going outside, yes but generally speaking it's something that every child enjoys if they are properly dressed for it, you know... in here you need all your legs and arms covered because of all these things here. A lot of children are put off by inappropriate clothing and dress. You know, if it's cold you've got to have a lot on. If it's wet, you've got to have something on that keeps you dry.

(I) Did the school equip the children with clothing?

(P) Yes, they did and I now refuse to take children outside who have not got their arms, legs and ankles covered.

(I) So you would say that the weather conditions are not so damaging enough for school...?

(P) No, they don't make any difference if the children are dressed properly, they make no difference at all. I have done this I think for six years... I work four days a week, I have never, ever, ever, ever not done one but you know, like on the day it snows, we all did sliding and friction and slid down the snow on trays. It was planned like that because you have to seize the moment.

(I) So, what happens with the children who are diagnosed with learning disability... sorry, learning difficulties are they included?

(P) Absolutely, yes... in fact they often get sent out with me... you go out with DELETED for five minutes and give us a bit of quiet in here! Yes, it is not a problem so as long I have sufficient support that is wholeheartedly agreeing with the children being outside. I mean, I've seen children that are absolute nightmares in the class room become totally absorbed and easy outside. I think sometimes it's about having space, being able to be practical and get dirty and also I think it's got real meaning to children. I think sometimes sitting at a desk with a text book, it's kind of hard to see how that might relate to real life but I think a lot of children, particularly those who struggle to concentrate in the class room feel a bit more free when they're outside and really relate to plants and animals.

(I) Have you noticed any behavioural changes?

(P) Yes.

(I) ... of children?

(P) Calmer... better observation skills... working together better... higher self-esteem... you know, success, everybody gets success outside... less aggression.

(I) How are the parents experiencing it? Are they supporting the Forest School? Are they involved in any way?

(P) Yes. I have at least... I have three... I had four parent helpers this morning... I have at least three or four parent helpers at every session...

(I) For one[1 WORD NOT CLEAR] (11.02)?

(P) Yes, they do but actually...

(I) The same parents or...?

(P) No, it's a variety. What I say to parents though is come along for a block of sessions, say four or five and then go away because quite often, if your child is in the class, for your child when you're there they want to be with you and they get used to it over five sessions and you know, you've lost your novelty value after the second one and then but if you just come once, leave it a few sessions and come again, the novelty is there again and the child doesn't leave the parent alone but if you come for a block and then leave it the children get used to it and they start learning form properly because the first time they come, the children love having their mum there. You know and all they do is hang on to mummy all morning and oh, here's my mummy here, you know and they don't learn because they're too busy being proud of their mummy, which is great that's what kids do.

(I) When would you say it's a good time for environmental education to take place? In which year group?

(P) All of them.

(I) All of them?

(P) It's all out here. I mean, you think of all the biology is out here... all the physics is out here...

(I) ... but I mean, do the small kids react better or do they adjust faster?

(P) All children at all ages get a lot out of it. I would hate to think because the schools that do it really amazingly well and I work at one, I told you they have... reception have all year and I have blocks with each year of six weeks in the afternoon and they have a project like the project that I have just done with year fives by the end of it, they have a list of skills, knowledge and attitude that they have to show they have acquired in a log book at the end. They have to be able to quickly erect a waterproof shelter... quickly and efficiently that when they sit under it and I pour a bucket of water on it, they don't get wet. They have to be able to build a fire and cook something on they're own. They have to be able to identify I think half a dozen of the trees that are in here. They have to show me that they can use several tools. They have to show me that they can use a saw properly to make something. That they can use a penknife to whittle something. They have to show me that they can do at least three different knots. They have to understand the phrases Indigenous, native, self-set... you know and for the older children their project was the Romans. So, they had to be able to build a defensive structure by the end of it, properly and learn about when you were

an invading force, you had to be able to get the structure up, you had to defend it, you had to be able to go and gather food. So, they have to cook their own food, do you know and that's a great thing to be able to do isn't it?

(I) So, coming back to DELETED, do you noticed any impact of the training outdoors or the environmental education of the school in the nearby society? Any impact?

(P) All I know is that they want me again. So, I mean, the teachers say to me... you've got to remember I only see them out here and I watch them from week to week become more independent, self-reliant, work together better and I know that those skills are taken with them into the class room. The class teacher says to me, yes this lot work together better, they have a better understanding of how to cooperate with each other and they say they have better observational skills... even playing out in the yard... in the playground they are better at looking for small objects, small bugs... small things and they understand the cycle of nature because you know, we're looking at it now in full summer and each week we look at it, you know what' happening this week? What's got taller? What's got smaller? So all those things like growth, all the science they become, it's easy... they do much better at. I mean, I don't know here because I haven't been here that much but one of the schools I work at we actually had to have a Government inspector because some of our results on the children's knowledge and understanding of their world was too good and the inspector said, this is too good for these age groups and then he came with me to a Forest School and said, now I understand and now why it's as good as it is and yes, you can have all these high levels. I think the children's knowledge and understanding of the world will be far superior.

(I) So, this school has been awarded with a green flag...?

(P) Yes...

(I) ... from the eco...

(P) ... eco-schools, yes because I believe... I mean, do you understand the background to all that?

(I) Yeah.

(P) Yeah... what else do you have to do? You have to have children running... well, you know an eco-committee...

(I) So, environmental education leading to awareness for the environment?

(P) Yes.

(I) Ok, very well. Thank you very much for participating. Is there anything else you'd like to say about your experience or anything about the questions?

(P) Well, I've been a teacher... look at the dragonfly... for 30 years... yeah, I qualified in 1983, that's 30 years isn't it? This is the best thing I've ever done and helped children learn. Will that do because it is?

(I) Apparently.

(P) It is... it is so easy to teach children about so many things doing this.

(I) Ok... thank you very much.

(P) My pleasure my love... So, you'll email...[END]

## Appendix 13. Sample of Leuven Involvement Scale

### Levels of Involvement Observation Schedule

Date 14/05/2014 Student (Y4LDG) Location Indoors

Time (2 minutes from...to....)	Indicators of Involvement		Activity	Comments
11.29-11.32	Concentration	3	L.O Can I solve math problems	
	Energy	3		
	Complexity and creativity	3		
	Facial expression and posture	4		
	Persistence	4		
	Precision	3		
	Reaction time	3		
	Language	4		
	Satisfaction	3		
	<b>Overall level of Involvement</b>	<b>3</b>		

## Levels of Involvement Observation Schedule

Date 19/02/2014 Student (abigail) Location Indoors

Time (2 minutes from...to....)	Indicators of Involvement		Activity	Comments
11.27-11.29	Concentration	4	Making a poster	listens carefully to the teacher's instructions
	Energy	4		
	Complexity and creativity	4		
	Facial expression and posture	4		
	Persistence	4		
	Precision	4		
	Reaction time	4		
	Language	4		
	Satisfaction	4		
	<b>Overall level of involvement</b>	4		

## Levels of Involvement Observation Schedule

Date 19/02/2014 Student (Y3G1) Location Indoors

Time (2 minutes from...to....)	Indicators of Involvement		Activity	Comments
11.27-11.29	Concentration	4	Making a poster	listens carefully to the teacher's instructions
	Energy	4		
	Complexity and creativity	4		
	Facial expression and posture	4		
	Persistence	4		
	Precision	4		
	Reaction time	4		
	Language	4		
	Satisfaction	4		
	<b>Overall level of involvement</b>	4		

## Levels of Involvement Observation Schedule

Date 19/02/2014 Student (Y3LDB) Location Indoors

Time (2 minutes from...to....)	Indicators of Involvement		Activity	Comments
11.38-11.40	Concentration	4	Making a poster	Laughing - Plays with paint/crayons
	Energy	3		
	Complexity and creativity	4		
	Facial expression and posture	3		
	Persistence	3		
	Precision	3		
	Reaction time	3		
	Language	4		
	Satisfaction	4		
	<b>Overall level of involvement</b>	<b>3</b>		

## Levels of Involvement Observation Schedule

Date 22/11/2013 Student (Y3LB) Location forest school

Time (2 minutes from...to....)	Indicators of Involvement		Activity	Comments
9.45-9.46	Concentration	4	Forest school what's in the soil	Seems very interested. Talked a bit with his friend
	Energy	4		
	Complexity and creativity	4		
	Facial expression and posture	4		
	Persistence	3		
	Precision	4		
	Reaction time	4		
	Language	4		
	Satisfaction	4		
	<b>Overall level of involvement</b>	4		

## Levels of Involvement Observation Schedule

Date 20/02/2014 Student (Y4B2) Location Indoors

Time (2 minutes from...to....)	Indicators of Involvement		Activity	Comments
09.05-09.07	Concentration	5	Arithmic exercises on smartboard	Raising his hand, he asked 2 questions, seems focused. All children are sitting on the floor.
	Energy	5		
	Complexity and creativity	5		
	Facial expression and posture	5		
	Persistence	5		
	Precision	5		
	Reaction time	4		
	Language	5		
	Satisfaction	5		
	<b>Overall level of involvement</b>	5		

## Levels of Involvement Observation Schedule

Date 20/02/2014 Student (Y4B3) Alpha Location Indoors

Time (2 minutes from...to....)	Indicators of Involvement		Activity	Comments
11.34 -11.36	Concentration	4	Writing a story	
	Energy	4		
	Complexity and creativity	4		
	Facial expression and posture	5		
	Persistence	4		
	Precision	4		
	Reaction time	4		
	Language	4		
	Satisfaction	4		
	<b>Overall level of involvement</b>	4		

**Levels of Involvement Observation Schedule**

Date 05/03/2014 Student (Y4LDG) Location Play

Time (2 minutes from...to....)	Indicators of Involvement		Activity	Comments
10.26-10.28	Concentration	4	On break	Interrupted thought playtime was over
	Energy	3		
	Complexity and creativity	3		
	Facial expression and posture	3		
	Persistence	3		
	Precision	4		
	Reaction time	4		
	Language	3		
	Satisfaction	3		
	<b>Overall level of involvement</b>	<b>3</b>		

## Levels of Involvement Observation Schedule

Date 06/12/2013 Student (Y4LDG) Location forest school outdoors

Time (2 minutes from...to....)	Indicators of Involvement		Activity	Comments
9.12-9.14	Concentration	5	Forest school	Making a shelter- looks very satisfied and is gathering materials
	Energy	5		
	Complexity and creativity	5		
	Facial expression and posture	5		
	Persistence	4		
	Precision	5		
	Reaction time	5		
	Language	4		
	Satisfaction	5		
	<b>Overall level of involvement</b>	<b>5</b>		

## Levels of Involvement Observation Schedule

Date 22/11/2013 Student (Y3LDB) Location forest school

Time (2 minutes from...to....)	Indicators of Involvement		Activity	Comments
9.47-9.49	Concentration	4	Collecting leaves for art project	Talking with his team-mates and showing them what he found.
	Energy	5		
	Complexity and creativity	5		
	Facial expression and posture	5		
	Persistence	5		
	Precision	5		
	Reaction time	5		
	Language	5		
	Satisfaction	4		
	<b>Overall level of involvement</b>	5		

## Levels of Involvement Observation Schedule

Date 22/11/2013 Student (Y3B1) Location forest school

Time (2 minutes from...to....)	Indicators of Involvement		Activity	Comments
9.53-9.55	Concentration	5	what's in the soil	seems to enjoy the session. Kept asking questions.
	Energy	4		
	Complexity and creativity	5		
	Facial expression and posture	4		
	Persistence	5		
	Precision	4		
	Reaction time	5		
	Language	5		
	Satisfaction	5		
	<b>Overall level of involvement</b>	5		

## Appendix 14. Photographs of the forest school

These photographs are presented on the school's website as examples of the forest school sessions.



*Photograph 1 Climbing trees*



*Photograph 2 Moving heavy logs together*



*Photograph 3 Collecting leaves*