"Sowing the Seed"

A Bio-ecological Exploratory Case Study of the Forest School Approach to Learning and Teaching in the Irish Primary School Curriculum.

by

Marie Claire Murphy

A thesis submitted in fulfilment of the requirements for the degree of Doctor of Philosophy at Mary Immaculate College, University of Limerick

Supervisors: Prof. Emer Ring, Dr Lisha O'Sullivan, and Dr Kathleen Horgan

Submitted to Mary Immaculate College, June 2022

Abstract

"Sowing the Seed": A Bio-ecological Exploratory Case Study of the Forest School Approach to Learning and Teaching in the Irish Primary School Curriculum.

While emergent research notes an increasing awareness regarding the importance of time spent in nature for personal well-being during the Covid-19 pandemic, recent literature describes children's disconnection from the natural environment. Education is a determining factor in shaping a child's perception of nature, however, research highlights that Irish primary school teachers lack knowledge and confidence in bringing children outdoors to learn. Forest School, a semi-structured approach to learning and teaching outdoors, guided by six underpinning principles, can provide pedagogical guidance for educators. Previous studies outline social, emotional, and academic learning outcomes during Forest School, however, research in the context of the Irish Primary School Curriculum is limited. Therefore, the aim of this research was to critically examine if this approach to learning and teaching outdoors is appropriate to deliver the vision, aims, principles, broad objectives, subject content objectives, concepts and skill development, and assessment of the Irish Primary School Curriculum. An exploration of educational theory and pedagogical processes underpinning both the Irish Primary School Curriculum and Forest School approach promote developmental approaches to learning which occur in stimulating environments that correspond with the child's learning needs. In addition to this, both approaches highlight the need for a balance of child and adult-led assessment methods, high standards of qualification, participation in continuing professional development, acknowledgement of school policy and procedures, careful planning and preparation, and emergent, experiential problem-, and inquiry-based learning opportunities that allow for child-led discoveries and questions. However, the Irish primary school curriculum provides mixed messages regarding its child-centredness, while the unstructured, play-based, and child-led nature of Forest School results in mixed opinions regarding how this approach should be delivered. Thus, this research sought to capture the lived experience of participants and uncover their reality of learning and teaching outdoors during Forest School within the vision, aims, principles, broad objectives, subject content objectives, concepts and skill development, and assessment of the Irish Primary School Curriculum. Semi-structured, non-participant observations of sixty-eight children and semi-structured journey interviews were conducted with fifty-five children in four primary school class levels over the course of an academic year. These in-depth semi-structured interviews incorporated children's pedagogical documentation to promote stimulated recall with five class teachers. Themes of Learning with, in and through the Environment during Forest School, Challenges of Learning and Teaching Outdoors in the Context of the Irish Primary School Curriculum, and Inclusion for Children with Special Educational Needs during Forest School emerged through deductive thematic analysis. Although the findings commend child-led choice through adult-facilitated teaching in emergent, play-based learning during Forest School, challenges in achieving the many curricular subject content objectives within the Irish Primary School Curriculum were apparent. While the forthcoming restructured curriculum, currently in draft format, aims to address this through the provision of broad learning outcomes, professional collaboration between class teachers and forest school leaders and the incorporation of child-led assessment methods to create inclusive approaches to learning and teaching is required to ensure rich learning experiences for children. Moreover, a need to overcome financial and access issues must also be addressed to successfully incorporate Forest School into the Irish Primary School Curriculum.

Declaration

I, Marie Claire Murphy, declare that this thesis has been composed solely by myself and that it has not been submitted, in whole or in part, in any previous application for a degree. Except where states otherwise by reference or acknowledgment, the work presented is entirely my own.

Elements of the work presented in Chapter One were previously published in the Journal of Outdoor and Environmental Education as "Bronfenbrenner's Bio-ecological Model: A Theoretical Framework to Explore the Forest School Approach?" (Murphy 2020).

Signature: _Marie Claire Murphy_

Marie Claire Murphy

02 Jun 2022

Acknowledgements

I wish to acknowledge all those who contributed to this thesis.

Dedication

for Hanora

Contents

ADD: Attention Deficit Disorder

ADHD: Attention Deficit Hyperactivity Disorder

AfL: Assessment for Learning

ALLEA: All European Academics

AoL: Assessment of Learning

ASD: Autism Spectrum Disorder

BERA: British Educational Research Association

BOM: Board of Management

CA: Content Analysis

CECDE: Centre for Early Childhood Development and Education

CoP: Community of Practice

CPD: Continuing Professional Development

CT: Class Teacher

DEIS: Delivering Equality of Opportunity in Schools

DESa: Department of Education and Science

DESb: Department of Education and Skills

DCU: Dublin City University

DCYA: Department of Children and Youth Affairs

DLP: Designated Liaison Person

EBD: Emotional Behaviour Disturbance

EEC: European Economic Community

ECE: Early Childhood Education

ESD: Education for Sustainable Development

FMS: Fundamental Movement Skills

FS: Forest School

FSA: Forest School Association

FSL: Forest School Leader

GDPR: General Data Protection Regulation

ICT: Information and Communication Technology

IFSA: Irish Forest School Association

INTO: Irish National Teachers' Organisation

ITE: Initial Teacher Education

IUA: Irish Universities Association

LCL: Learning Combination Lock

LPP: Legitimate Peripheral Participation

MIC: Mary Immaculate College

MIREC: Mary Immaculate Research Ethics Committee

NCCA: National Council for Curriculum and Assessment

NCSE: National Council for Special Education

NPWS: National Parks and Wildlife Service

OCN: Open College Network

PDF: Portable Document Formats

PE: Physical Education

PhD: Doctor of Philosophy

PLC: Primary Language Curriculum

PLEY: Play and Learning in the Early Years

PPCT: Process Person Context Time

PSC: Primary School Curriculum

QQI: Quality and Qualifications Ireland

SEBD: Social Emotional Behavioural Difficulties

SESE: Social, Environmental and Scientific Education

SET: Special Education Teacher

SPHE: Social Personal Health Education

SNA: Special Needs Assistant

SSLD: Specific Speech and Language Disorder

ST: Student Teacher

UDL: Universal Design for Learning

UK: United Kingdom

UN: United Nations

UNESCO: United Nations Educational, Scientific and Cultural Organisation

USA: United States of America

An Introduction to the Research and the Conceptual Framework

The Forest Floor

1.1 Introduction

Concepts in this research study are organised through the metaphor of a forest. The research foundations are established in this Introduction chapter, which is titled "The Forest Floor". Here, the cruciality of a conceptual framework is compared to the requirement for soil in a forest. Subsequent chapter metaphors include "The Beech Tree"; "Tree Propagation"; "New Growth"; and "Nurturing the Seedlings".

The conceptual framework connects all elements of the research process, including researcher interests, goals, identity and positionality, context, and setting (macro and micro), formal and informal theory, and methods (Ravitch and Riggan 2017). Through sequential and logical propositions, this chapter provides foundations for an exploration of a holistic, child-led, semi-structured approach to outdoor learning and teaching, known as Forest School (FS), in the context of the Irish Primary School Curriculum (PSC) (Ravitch and Carl 2016; Ravitch and Riggan 2017; Irish Forest School Association (IFSA) 2019). The overarching research question of *"How do Children in Senior Infants, Second Class, Fourth Class and Fifth Class and their Teachers Perceive the Impact of the Introduction of Forest School Sessions on Learning and Teaching in an Irish Primary School?"* and following sub-questions of:

> ➤ *How do the children perceive the Forest School sessions?*
> ➤ *What principles and subject content of the Irish Primary School Curriculum, to include Aistear: The learning outcomes of the Early Childhood Curriculum Framework, are observed during the Forest School sessions?*
> ➤ *How do the class teachers perceive the Forest School sessions?*
> ➤ *What learning and teaching methodologies, if any, do the class teachers identify as unique to the Forest School approach?*

prompted decisions regarding the theoretical framework employed in this study. As these questions were based on the lived experience of the participants, consideration of social and environmental impacts on development was essential. In addition to this, motivational learning and teaching approaches, grounded in a contextual space of outdoor pedagogical practices, and the Irish PSC were key to the formation of the theoretical framework that underlies the research.

1.2 Personal Interests and Goals

The identity of the researcher is a central component in qualitative studies, as positionality influences the intersections of the roles and relationships that exist between the researcher and the participants within the study (Ravitch and Carl 2016). Complexities of the researcher's professional identities; as a primary school teacher and a forest school leader (FSL), teaching in an Irish primary school, with experience of part-time lecturing work in visual arts, early childhood education, and school placement are considered. Therefore, the following paragraphs begin with the interests and goals of the researcher that led to the formation of the research questions. Due to the personal nature of this section, the writing is constructed in a first-person narrative.

I believe that learners create their own knowledge during participation in meaningful educational experiences (Dewey 1934; 1938a; 1958, Ring and O'Sullivan 2018, Ring et al. 2019). For me, child social and emotional development is of equal importance to academic achievement (Piaget 1936; 1945; Piaget and Inhelder 1973; Vygotsky 1926; 1929; Robinson 2015; Ring et al. 2019). This can be achieved through integrated teaching approaches which afford the child opportunities to explore his/her strengths while engaging in curricular content (Vygotsky 1926; 1929, National Council for Curriculum and Assessment (NCCA) 1999a; Wilson 2008; Waite et al. 2017; Ring et al. 2019). For this to occur, the teacher must hold a high level of content knowledge and the ability to develop positive relationships through meaningful social interactions with children (Edwards 2012; Robinson 2015; Ring et al. 2019). Furthermore, this teacher must strive to understand alternative views of the world from the child's perspective (Delrio 2012; Edwards 2012; Frankel 2012; Rinaldi 2012).

These personal opinions on learning and teaching were formed during a period of personal critical reflection shortly after my brother-in-law's passing in 2013 (Swann 2012; Ravitch and Carl 2016). I, along with my family members, struggled to cope with the most natural process we are all certain to experience in life: grief. This challenging time highlighted how protected and stress-free our lives were. I questioned why I, a successful professional, had struggled to recognise my own emotions and did not function in my daily life during this challenging time. Was I the product of a schooling experience that was abstract to real-life issues and needs? Or was this my own personal weakness and lack of self-awareness and resilience due to the absence of meaningful opportunities for social and emotional development?

As a young child, I enjoyed playing the piano, speech and drama, swimming, tennis, visual arts, and horse riding. Skills, habits, talents, and mindsets developed during these extracurricular activities, especially Visual Arts, were used as a source of healing during this difficult time. This experience led me to reflect on the social and emotional needs of the children in my classroom. As a result, I sought further knowledge and guidance in Visual Arts teaching to provide each child with the opportunity to learn the same skills, habits, talents, and mindsets that one day may offer a source of healing should it be required. Subsequently, I completed a master's degree in Art and Design Education at the Limerick School of Art and Design[1]. Elements of this course involved the experiential creation of our own art through immersion in our community of practice (CoP) (Lave and Wenger 2016). The first topic I decided to explore was trees, however, I became so immersed in the theme of nature that I created all my art outdoors and never availed of any indoor studio space. This creative journey led me to discover holistic benefits of time spent in nature (Wattchow and Brown 2011; Baker 2017; Huggins and Wickett 2017; Kuo et al. 2019) and joy experienced in the flow of visual arts practices (Csikszentmihalyi 1975; 1990; 1996) which resulted in a small research study that investigated the possibility of exploring the Irish PSC Visual Arts curriculum (NCCA 1999f; 1999o) through the FS approach to learning and teaching (Murphy 2018).

---

[1] The Limerick School of Art and Design is a constituent art college of the Technological University of the Shannon, located in Limerick, Ireland.

I had the opportunity to meet many people from a variety of educational backgrounds during my continuing professional development (CPD) in FS Leadership who were committed to implementing this child-led approach to outdoor learning and teaching in their daily educational settings (IFSA 2019). One woman reflected that her son had found the traditional classroom learning environment unconducive for his learning needs. She felt that alternative approaches to learning and teaching, such as FS, could provide children who had similar needs as her son with innovative means to engage with the curricular content. I ruminated about this conversation during everyday teaching practices and questioned if the FS approach was beneficial, and/or sustainable in our primary schools? Furthermore, I wished to critically analyse whether this approach could achieve the vision, aims, principles, broad objectives, subject content objectives, concepts and skill development, and assessment of the Irish PSC?

While I find solace in nature and believe that interaction and engagement with the natural environment are beneficial for children, I also believe that CPD is required to support educators with strategies for teaching outdoors. Outdoor pedagogical CPD for teachers is facilitated through regional educational support centres (Education Support Centres Ireland 2021), however, FS-specific CPD is provided by private companies only, such as Forest School Ireland (Forest School Ireland 2021). As a result, participants who wish to complete FS CPD must self-fund to partake in these courses. Furthermore, in my experience, one-off workshops do not provide the knowledge required to deliver high-quality outdoor educational experiences for all curricular levels and abilities throughout an academic year. Instead, research indicates that a long-term CoP, in which participants become immersed in a shared domain of interest, can provide an optimal learning environment (Lave and Wenger 2016). It is unrealistic to expect educators to rely solely on literature to support outdoor teaching practices, as pedagogical guidance is required through continued practice and engagement in skills such as knot-tying, fire lighting, shelter building, and knife use, as well as curricular subject understanding and local environmental knowledge. Furthermore, these approaches

should be continually evaluated to ensure effectiveness in teacher CPD (Guskey 2002; 2009).

1.3 Identity and Positionality

Criticality in the research process is achieved through rigorous self-reflection, which includes a systematic assessment of the researcher's identity, positionality, and subjectivities to reflect the complexities of lived experiences (Ravitch and Carl 2016). The critical issues of power and inequality, such as the imposition of social hierarchy and the issues of structural inequity, are central in taking a critical approach to qualitative research (Ravitch and Carl 2016). Therefore, this section, which is also constructed in the first-person narrative, addresses uncomfortable truths regarding the researcher's identity.

I was somewhat successful in our educational system. Although I did not flourish after primary school, I believe this was due to my own immaturity. However, I was fortunate to have a family support system that could provide me with alternative academic courses to achieve my career goals. The uncomfortable truth is that I am of a privileged background and from a family that could support my educational journey both emotionally and financially at post-primary and undergraduate level. My parents instilled a strong work ethic in me, but I believe that my husband's outlook on life has also been an important influence on my vision of the role of education. Anthony and I met in 2003 and have spent the majority of our lives in each other's company. He was born with a genetic illness called cystic fibrosis[2], but thankfully maintains a good quality of life due to advancements in modern medicine and research. His parents would have imagined a short life of ill health for a child with cystic fibrosis in the early 1990s, and as a result he values health and happiness over money and societal gains. I believe that this weighs on my opinion of the importance of happiness in education, which aligns with the writings of Noddings (2003) and Robinson (2015).

I enjoyed curricular subjects such as Geography and History at school and pursued this passion at undergraduate level. On reflection, I think that this may have

---

[2] Cystic fibrosis is a hereditary disease that affects the lungs and digestive system.

been due to the fact that topics were often integrated with Visual Arts, as I hold fond memories of creating research-based projects on The Royal Canal[3], horses, and historical Irish artefacts of The Celts[4] and The Stone Age[5]. My knowledge of the outdoors is based on Irish culture and heritage, and I have no direct experience with the Scandinavian philosophy that underpins the FS approach. However, during the summer of 2012, I gained invaluable insight into teaching beyond this Irish cultural background when I volunteered and taught in a school near Madudu, Uganda. Here, teachers used nature as a resource to support teaching methodologies. Children gathered natural resources to use as maths counters, writing equipment, and imaginative toys. The contrast between the manufactured store-bought resources used in my classroom in Ireland, and the use of natural items by Ugandan children for play and learning highlighted how little I encouraged children to engage with the natural environment around the school as a stimulus for learning, and the extent to which I overlooked the use of nature in my teaching; therefore, my interest was directed to this area of research.

As an Irish primary school teacher recognised by The Teaching Council (The Teaching Council 2021), and an employee of my school's Board of Management (BOM), I am responsible for teaching a wide range of subjects according to the Irish PSC (NCCA 1999a). Although my position on learning and teaching aligns with the child-led, integrated, active, constructivist approach underpinning the vision, aims, principles, broad objectives, subject content objectives, concepts and skill development, and assessment of the Irish PSC (NCCA 1999a), I believe that there is scope to revise and adapt guiding pedagogical approaches to address recent findings regarding the decline in children's play outdoors and the importance of primary schools in providing access to the natural world (The Heritage Council 2016; Egan and Pope 2018). The NCCA is currently participating in the process of consultation for curriculum revision, in which key a competency of "being an active citizen" to "interact and engage with the nature world" to "come to an appreciation of its

---

[3] The Royal Canal is a canal originally built for freight and passenger transportation from Dublin to Longford in Ireland.
[4] The Celts were people in Europe identified by their use of Celtic languages and other cultural similarities.
[5] The Stone Age was a prehistoric period during which stone was widely used to make tools.

value… as custodians of it" is outlined (NCCA 2018a; 2020). Thus, it seems a pertinent time for empirical research on children and teachers' perspectives of approaches to learning and teaching outdoors. Therefore, in the following section, a rationale for learning and teaching outdoors will be explored.

1.4 Creating a Rationale for Learning and Teaching Outdoors

Discourse about children's vulnerability to risk and dangers outdoors dominates society today (Louv 2005). Children have become disconnected from nature due to limited opportunities for play in the natural environment (Louv 2005; Maynard and Waters 2007; Mercogliano 2007; Kernan and Devine 2010). As a result, children view nature as something to watch, wear, consume, or ignore, thus lacking environmental and sustainability awareness (Louv 2005; Mercogliano 2007; O'Brien 2009; Haas and Ashman 2014; Harris 2017; Baker 2017; Walker 2017), which is a concern highlighted in a recent departmental report (Department of Education and Skills (DESb) 2022). However, emergent research notes an increase in awareness of the importance of time spent in nature for personal well-being during the Covid-19[6] pandemic (Rousseau and Deschacht 2020; Samuelsson et al. 2020) and preliminary findings from the Play and Learning in the Early Years (PLEY) survey (Mary Immaculate College (MIC) 2020) outline an increase in time spent playing outdoors for many children during this time. These patterns of change can revert once the Covid-19 crises passes (Rousseau and Deschacht 2020) and, since education is a determining factor in shaping a child's perception of nature (Aktepe 2015; Walker 2017), opportunities are presented to redesign practice with a focus on resilience, well-being, and sustainability (Bhattacharya and Stern 2020). Moreover, Education for Sustainable Development (ESD) is recognised as an integral element of the United Nations (UN) Sustainable Development Goal[7], and as children are spending an increasing amount of time in settings such as school and after-school care, there is an onus on educational settings to incorporate natural outdoor play experiences in open green areas (Milchem 2011). There are, however, some challenges regarding

---

[6] Coronavirus is an infectious disease caused by the SARS-CoV-2 virus.
[7] The Sustainable Development Goals are a universal call to action to end poverty, protect the planet and improve the lives and prospects of everyone, everywhere. The seventeen Goals were adopted by all UN Member States in 2015, as part of the 2030 Agenda for Sustainable Development which set out a fifteen-year plan to achieve the Goals.

this. Educators require guidance in how to teach children outdoors, as the space can be conducive to noisier, messier, bigger, and faster means of learning (Bilton 2003; Maynard and Waters 2007; Harding 2008; Greenwood 2017; Ephgrave 2018). It is not sufficient to provide stimulating school grounds alone, as children must learn how to interact with nature (Owens 2005; Walker 2017). Effective outdoor educational environments invite and sustain active investigation (Wilson 2007) and are not a replication of an indoor classroom or the school yard at break time (Harding 2008; Greenwood 2017; Ephgrave 2018). Instead, the researcher agrees with Waite et al.'s (2017) argument that planning outdoor educational activities should begin with curricular visions, aims, principles, and subject content objectives. This should be supported by including children's voices during assessment techniques that contribute to a sense of self-identity during collaborative social processes (NCCA 2007; 2020). Teachers' attitudes toward learning and teaching outdoors are crucial in this process (Taylor 2013; Greenwood 2017; Mackinder 2017). Similar to the arguments of Mercogliano (2007) Harding (2008) Ephgrave (2018) and Kuo et al. (2019), the researcher notes that nature can be a valuable resource for learning and teaching, as the natural environment is rich in fascinating organic stimuli such as leaves, twigs, grass, and stones (Gibson 1979; Harding 2008; Dowdell et al. 2011; Roe and Aspinall 2011; Morrissey 2013). However, outdoor, and nature-based lessons tend to be delivered through indoor, technological, classroom-based sources (Maynard and Waters 2007; Kernan and Devine 2010; Taylor 2013).

A semi-structured approach, such as FS, can support teachers in creating meaningful learning and teaching opportunities outdoors. This approach is led by six guiding principles that can be integrated within a set curriculum (IFSA 2019). These principles are outlined in Figure 1.1. An exploration of the history and philosophies underpinning this approach is included in the following chapter: Review of the Literature.

Principle 1	Principle 2	Principle 3
Forest school is a long-term process of regular sessions	Forest school takes places in a woodland or natural enviornment	Forest school uses a range of learner-centred processes

Principle 4	Principle 5	Principle 6
Forest school aims to promote the holistic development of all those involved	Forest school offers learners the opportunity to take supported risks	Forest school is run by qualified Forest School Practitioners

Figure 1.1 The Six Guiding Principles of the Forest School Approach (Irish Forest School Association 2019)

The following section will continue this conversation to create an initial rationale for an exploration of the FS approach to learning and teaching in this research project, while a more detailed discussion is included in Chapter Two.

1.4.1 Incorporating the Forest School Approach to Learning and Teaching into this Rationale.

A growing number of empirical research studies outline benefits for learning through the FS approach. These include measured risk taking through participation in authentic real-life tasks (Maynard 2007; Elliott 2015; Harris 2017), social and communication skills during cooperative learning (Swarbrick et al. 2004; Ridgers et al. 2012; Waite et al. 2015; Harris 2017), gross and fine motor skill development (O'Brien 2009; Ridgers et al. 2012; Waite et al. 2015; Turtle et al. 2015) and improvement in physical development and stamina (Ridgers et al. 2012; Turtle et al. 2015). The findings of these studies also argue that FS is well placed to deliver curricular learning objectives (O'Brien 2009; Mackinder 2017; Coates and Pimlott-Wilson 2019). However, criticisms are evident, namely the need for the development of theoretical frameworks (Knight 2018; Leather 2018) and robust research methods (Slade et al. 2013; Leather 2013; 2018) to guide these studies. As most of these studies were conducted in the United Kingdom (UK) (Swarbrick et al. 2004; Maynard 2007; Knight 2011; O'Brien 2009; Roe and Aspinall 2011; Ridgers et al. 2012; Slade et al. 2013; Cumming and Nash 2015; Elliott 2015; Turtle et al. 2015; Waite et al. 2015; Harris 2017; Mackinder 2017; Coates and Pimlott-Wilson 2019), it is necessary to

explore the FS approach in the context of the Irish PSC (Murphy 2018). A study of this nature should gather a range of perspectives, over a long period of time (Harris 2017) to ask critically if learning through this approach is appropriate to achieve the Irish PSC vision, aims, principles, broad objectives, subject content objectives, concepts and skill development, and assessment?

Therefore, the following section begins with an exploration of the theoretical frameworks that were applied to ensure that this research was rigorous and robust in its approach.

1.5 Developing a Theoretical Framework

Theory grounds research in relevant conversation and arguments to create layers of understanding that deepen and extend comprehension of concepts by conceptualising their construction and meaning (Ratvitch and Carl 2016). This study was contextualised and guided by Bronfenbrenner's Bio-ecological Model (1979; Bronfenbrenner and Morris 1998; 2006), Dewey's educational theories (1916; 1933; 1934; 1938a; 1938b; 1958), Beard and Wilson's Learning Combination Lock (LCL) (2018), Cornell's (1998) Flow Learning, and Lave and Wegner's (2016) Legitimate Peripheral Participation (LPP). These formal theories align with the researcher's positionality on the importance of joyful participation in meaningful educational experiences. Moreover, they support the PSC vision of child-led, integrated, and active approaches to teaching within the FS ethos of emergent, real-life tasks located in the outdoors. Elements of these theories which underpinned and directed this study are explored in the following sections.

1.5.1 Bronfenbrenner's Bio-ecological Model of Human Development

Bronfenbrenner's (1979; Bronfenbrenner and Morris 1998; 2006) Bio-ecological Model, illustrated in Figure 1.2 (Hayes et al. 2017; Rozsahegyi 2018), characterises development as a process of reciprocal interaction between the child and his/her environment (O'Toole 2016). This multi-layered environment encompasses all settings that influence the child's daily life, including immediate family and school influences, in addition to increasingly distal and abstract contextual forces, such as government policy and culture (Bronfenbrenner 2005). These environmental settings, known as systems, influence the development of the child

by providing opportunities or placing restrictions on experiences and activities (Hayes et al. 2017; Rozsahegyi 2018). Through active participation in progressively complex interactions, the child develops intellectually, emotionally, socially, and morally (O'Toole 2016; Rozsahegyi 2018). Interactions, or proximal processes (Bronfenbrenner 2005), that occur within and/or across these systems must occur on a regular basis and over extended periods of time to be effective. However, these proximal processes vary from child to child, as the characteristics of the developing person, the immediate and remote environment, and the nature of the development under consideration are interconnected (O'Toole 2016; Rozsahegyi 2018).
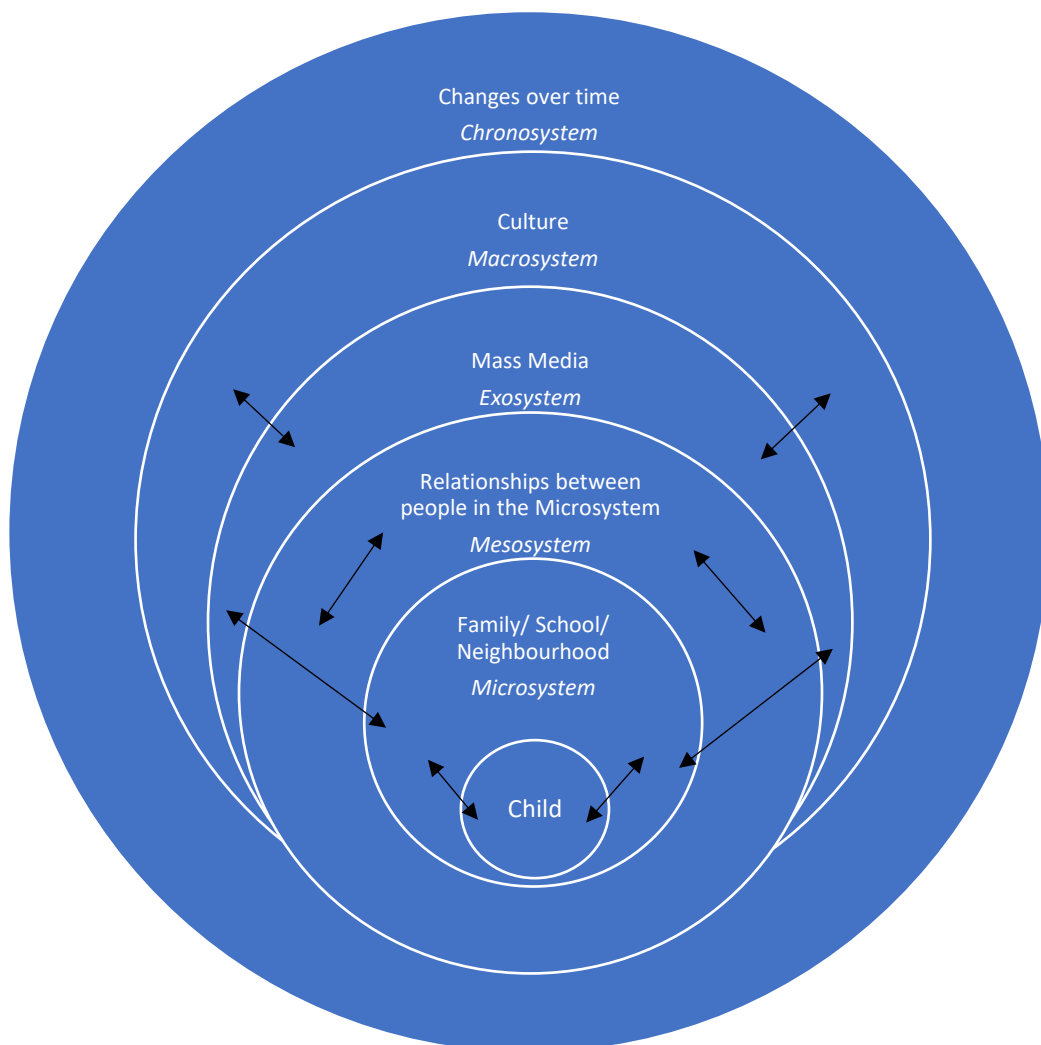
Figure 1.2 Bio-ecological Model (Bronfenbrenner 1979; Bronfenbrenner and Morris 2006)

This section will explore systems that lie within the Bio-ecological Model, illustrated in Figure 1.2, to outline environmental influences on the development of the child, according to Bronfenbrenner (1979; Bronfenbrenner and Morris 2006). The following Section 1.5.2 will continue this conversation to include processes that occur within these systems.

The first system in which the child experiences direct social and interpersonal interactions is most often family and school settings, known as the microsystem (O'Toole 2016). Microsystems are settings that invite, permit, or inhibit engagement with other systems (Bronfenbrenner 1994). Similar to the researcher's experience, outlined previously in Sections 1.2 and 1.3, the microsystem can offer an opportunity through access to extracurricular activities and/or financial support in education (Hayes et al. 2017).

Influences that occur in the microsystem are closely connected, as neighbourhood peers often attend the same school as the child, and teachers may have connections with the family through school support services and community organisations (Bronfenbrenner and Morris 1998; 2006; O'Toole 2016; Hayes et al. 2017). Thus, the mesosystem takes account of relationships between people and/or institutions in the microsystem to encompass "a chain of activities" experienced across a range of settings (O'Toole 2016, p.28; O'Sullivan and Ring 2021). When developmental expectations are congruent across systems, such as ESD, the child will most likely learn socialisation messages easily and quickly. However, contradictory socialisation experiences in different system settings can be a source of problems, as the child must navigate conflicting values and rules for behaviour (Bronfenbrenner 1979; Bronfenbrenner and Morris 1998; 2006; Hayes et al. 2017).

The exosystem includes settings and contextual influences that may indirectly affect the child's development. Examples of the exosystem include the parent(s)/guardian(s)' workplace(s), the availability of nature in the neighbourhood and policy documentation that impact curricular content.

The penultimate system, the macrosystem, refers to larger and more abstract influences on the development of the child, such as cultural values, attitudes, and

the nature of the political, legal, and economic system (Hayes et al. 2017). Bronfenbrenner (1979) notes that while cultures and subcultures may differ from one another, they hold relatively homogeneous internal identities. Thus, this system refers to similarities within a given culture and the content of its microsystems, mesosystems, exosystems as well as any belief systems that may underlie them (Bronfenbrenner 1979; O'Toole 2016). Examples of this system include patterns of heritage, cultural norms, and a collective cultural identity. Irish festivities and celebrations, educational policy, and the structure of teaching in Irish primary school settings are but some examples, however, patterns of racism and religious celebrations viewed as cultural norms may also be referenced in this system.

Finally, the chronosystem lies at the edge of this model and refers to environmental events and transition patterns that impact during a person's life (Bronfenbrenner 1995; Bronfenbrenner and Morris 1998; 2006). Influences in every system are bidirectional and can change over time due to reasons ranging from individual development to secular change (O'Toole 2016; Hayes et al. 2017).

To summarise, the Bio-ecological Model outlines that perspectives of children in one context may differ from that of a child in another. Thus, to critically explore the FS approach in the context of the Irish PSC, the child's voice should be considered, in collaboration with the perspectives of people and/or institutions in the current environment of the child, in understanding progressions in learning and teaching (NCCA 2007; 2020). Figure 1.3 illustrates the application of Bronfenbrenner's (1979; Bronfenbrenner and Morris 1998; 2006) Bio-ecological Model to this study. Here, the potential levels of interaction a child may have with nature throughout the many systems in which they live are placed upon the microsystems, mesosystems, exosystems, macrosystems, and chronosystems formerly discussed. This model helped to form the direction of this study, and bidirectional perspectives of children and class teachers (CT) were collected within an individual Irish primary school context during a specific chronological time scale of one academic year (2018-2019).
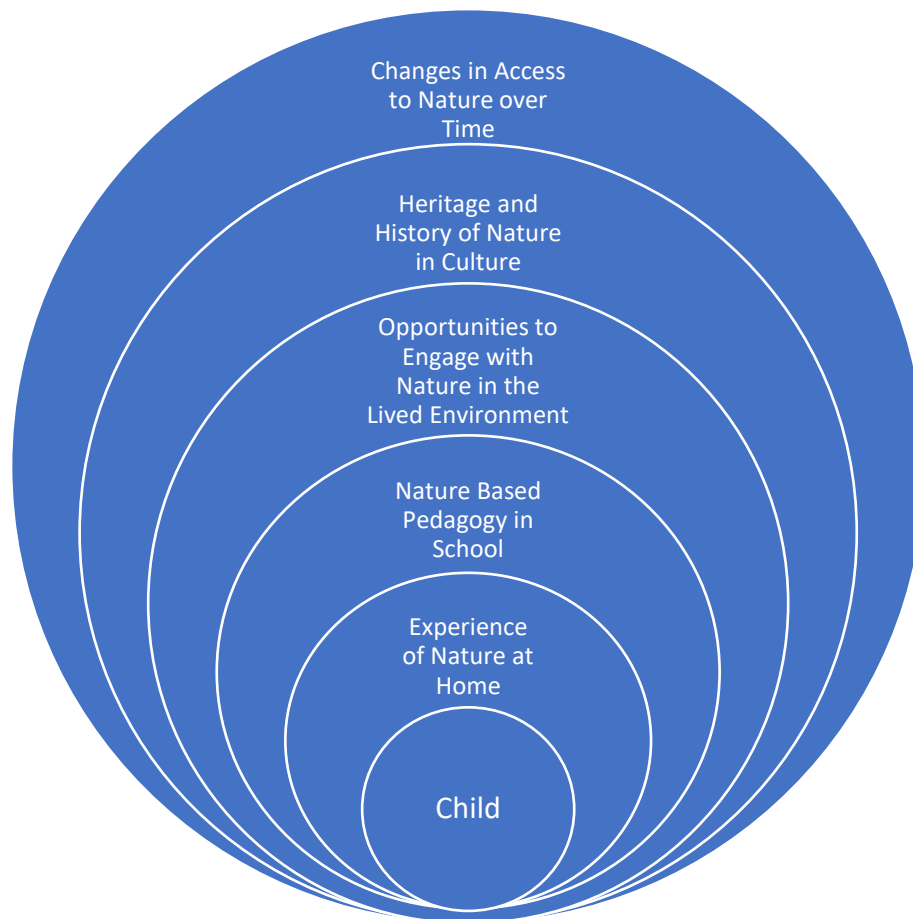
Figure 1.3 Exploring the Forest School Approach through the Bio-ecological Model

The following section will continue to build on this discussion through an exploration of Bronfenbrenner's (Bronfenbrenner and Morris 1998; 2006) process-person-context-time (PPCT) elements which are located within each of the aforementioned systems.

1.5.2 Applying the Process, Person, Context and Time Structure to the Bio-ecological Model

The current Bio-ecological Model, published by Bronfenbrenner and Morris posthumously in 2006, synthesises child, microsystems, mesosystems, exosystems, macrosystems, and chronosystems while including additional elements of process, person, context, and time. Each element of the PPCT Model must be examined individually and in terms of their interaction (Bronfenbrenner and Morris 2006). These elements are explored in detail in the following sections.

1.5.2.1 Process:

Bronfenbrenner refers to the important relationships within which the child develops as proximal processes, highlighting that he/she is located within systems of development occurring over time, as outlined previously (O'Toole 2016; Hayes et al. 2017). Human development takes place through regular processes of progressively complex interactions between the active, evolving child and the persons, objects, and symbols in their environment (Bronfenbrenner 1995). This occurs through the actions they take within the opportunities and constraints of history and social circumstances within which they are positioned (O'Toole 2016).

1.5.2.2 Person:

Characteristics of the child, such as age, gender, physical and/or mental health, influence interactions between the child and persons, objectives, and symbols in the environment. As a result, the child's characteristics may affect processes that influence the child's individual development within this model, regardless of the context and time it occurs within (Hayes et al. 2017).

1.5.2.3 Context:

The Bio-ecological Model serves as a context for the development of the child, as biological factors, evolutionary processes, and contextual aspects impose opportunities for the child to achieve their full potential (Bronfenbrenner and Morris 2006). Thus, conditions in the child's environment must be investigated to recognise factors that support development, while also considering factors that may set limits (Bronfenbrenner and Ceci 1993; 1994).

1.5.2.4 Time:

The proximal processes that occur in the life of the child are strongly influenced by the historical period during which they live. Continuity or discontinuity of relationships within a system is referred to as micro-time. Occurrences that span over broader time intervals of days and weeks are considered meso-time, and macro-time focuses on the changes in the larger society within and across generations. In addition to this, child experiences can occur cumulatively over time. However, it should be noted that changes that may seem small and statistically insignificant can be predictive of significant changes in the future (Bronfenbrenner and Morris 2006; O'Toole 2016).

In conclusion, a bio-ecological perspective illustrates the complexity of studying perspectives regarding learning and teaching during the process of FS in the context of a specific school whose learning and teaching are situated in the Irish PSC throughout the time span of one academic year. This model will serve as the road map to structure and situate additional theories and approaches within, which is explored in the following section (Hayes et al. 2017).

1.5.3 Positioning Additional Theories within Bronfenbrenner's Bio-ecological Model

Bronfenbrenner's Bio-ecological Model of human development also allows opportunities to view the elements of process, person, context, and time through the lens of multiple theorists (Hayes et al. 2017). While the previous section demonstrated how FS can be embedded within systems of the Bio-ecological Model, this segment will explore the connections between Dewey's educational philosophical theories (1897; 1900; 1902; 1916; 1933; 1934; 1938a; 1938b; 1958) and elements of PPCT (Bronfenbrenner and Morris 2006) that contribute to the development of the conceptual model of this study.

1.5.3.1 John Dewey's Educational Philosophical Theories

This section details Dewey's (1897; 1900; 1902; 1916; 1933; 1934; 1938a; 1938b; 1958) exploration of social contexts for learning and teaching to outline the development of the conceptual framework and refine the research questions that drive this study.

According to Dewey (1916), education systems are created in response to societal needs (Ring et al. 2021). Currently, society is recovering from the Covid-19 pandemic and restrictions to outdoor play areas which occurred as a result for many children in Ireland. Studies outline the decline in physical activity and the increase in sedentary recreational screen time (Kovacs et al. 2021), especially among low-income households during this time (Mitra et al. 2020; Perez et al. 2021). Moreover, recent curricular restructures outline the need for children to interact and engage with the natural world around them to come to an appreciation of its value and acknowledge their responsibilities as custodians of it (NCCA 2020). As Dewey (1900) viewed the child as an active member of society, learning and teaching are instrumental in creating this social change and reform (Dewey 1897; 1900; 1938a).

However, Dewey (1897) also argues that curricula should focus on achieving the full potential of the individual child. Ring et al. (2021) highlight tensions that exist in ensuring education is concerned with nurturing the uniqueness of the child, while simultaneously equipping him/her with skills and knowledge required for the greater good of society as a whole (Dewey 1897). While he acknowledges these complexities of learning, Dewey (1902; 1938a) outlines two major schools of thought. The first is based on the curriculum and focuses solely on the subject matter to be taught (Dewey 1902). He states that in this first case the child is inactive as they engage in the "drudgery" (Dewey 1933, p. 103) of completing outcome-based tasks where the process of doing the work loses all value to the child. Instead, he argues that for education to be effective, it must have a purpose for the child (Dewey 1938a). Content should be presented in a way that allows the child to relate the information to previous experiences in order to deepen connections with learning through self-expression, individuality, spontaneity, play, interest, and natural unfolding (Dewey 1916; 1933). Thus, the child must engage directly with his/her environment and begin in the "raw" (Dewey 1934, p. 3) to ensure depth of knowledge (Dewey 1916; Dewey 1933; Dewey 1934). However, it should be highlighted that Dewey rejected a dichotomy of approaches to learning and teaching and instead saw a harmonisation of principles as the optimal approach (Pring 2014, cited in Ring and O'Sullivan 2018). Although the FS approach can provide an immersive and active learning experience for the child, Dewey cautions that not all experiences are educative and highlights that there must be a balance in delivering high standards of knowledge while simultaneously relating information to the interests and experiences of the child (Ord and Leather 2011). Therefore, he advocates a process-based inquiry approach to learning and teaching that includes ongoing self-correction with no fixed truths or certainty (Dewey 1938b), balanced by the scaffolding of future learning opportunities by the teacher (Ring and O'Sullivan 2018). This became known as experimental learning and led to problem- and inquiry-based learning and teaching (Taylor 2013; Ring and O'Sullivan 2018).

The following sections aim to locate Dewey's (1897; 1900; 1902; 1916; 1933; 1934; 1938a; 1938b; 1958) theories within the Bio-ecological Model and PPCT

elements (Bronfenbrenner and Morris 2006) to create a theoretical framework to rigorously gather perspectives of children and CTs participating in the FS approach to learning and teaching.

1.5.3.1.1 Process:

For Dewey, rote learning "hardly touches the mind at all" and effective education must occur through real-life experiences in which the child has the freedom to discover his/her abilities and potential (Dewey 1916; Dewey 1933, p.28; Dewey 1934). This should occur during inquiry-based discovery, which is similar to experiential teaching methodologies, as discussed in the following Section 1.5.3.2, to stimulate the child's imagination and curiosity (Reich 2009; Ring and O'Sullivan 2018).

1.5.3.1.2 Person:

Problem-based challenges empower the child to engage in real-life solutions ensuring he/she is central to the process of becoming. (Freire 1970; Mac Naughton 2005; Dancy et al. 2010; Cohen et al. 2011). Thus, inquiry-based experiential learning experiences place the child at the centre of the learning process (Dewey 1916; Dewey 1933; Dewey 1934). Beard and Wilson's (2018) research-based theory, the LCL model, builds on this understanding to include sensory and emotional influences, which is further outlined in Section 1.5.3.2.

1.5.3.1.3 Context:

Similar to Bronfenbrenner, Dewey (1933) outlines that the learning environment must stimulate the child to become engaged in learning. The importance of the natural outdoor environment is also reflected in the work of additional educational theorists such as Rousseau (1762; Waite et al. 2015), Froebel (1826; Taylor 2013), and Montessori (1912), which are explored in the following literature review chapter. In addition to this, context will be explored through the LLP Model based on Lave and Wenger's (2016) research in Section 1.5.3.3 to reflect how learning can occur in the context of FS.

1.5.3.1.4 Time:

Time is reflected in both Bronfenbrenner (1979: Bronfenbrenner and Morris 2006) and Dewey's (1934) theories. Bronfenbrenner (1979: Bronfenbrenner and

Morris 2006) notes influences of the meso-time in which the child lives on proximal processes, and Dewey (1934) argues the importance of learning experiences that reflect current needs of the child. The micro-time of each FS session was constructed with respect to Cornell's (1998) research-based Flow Learning Model in this study, which is explored in more detail in Section 1.5.3.4. While these theories acknowledge that learning is affected by the time in which it is situated, it also occurs in social contexts which are influenced by cultural expectations (Swann 2012). Thus, knowledge may provide techniques of normalisation (Dahlberg et al. 1999; Mac Naughton 2005). Therefore, the child should be taught to analyse, reflect, and problem-solve during the learning process (Dahlberg and Moss 2005).

In summary, Figure 1.4 provides an overview of how Dewey's (1897; 1900; 1902; 1916; 1933; 1934; 1938a; 1938b; 1958) theories, as explored in this section, were placed within Bronfenbrenner's (2006) PPCT model to support the foundations of the initial conceptual framework of this study.

Process:	Person:
Learning requires regular process-based experiences that become more complex	Learning based on the personal experiences of the child based on their personal characteristics
Context:	**Time:**
Learning focused on creating societial change in the context in which the child lives	Learning experiences based on the needs of the time in which the child lives

Figure. 1.4 Situating Dewey's (1897; 1900; 1902; 1916; 1933; 1934; 1938a; 1938b; 1958) Theories within Bronfenbrenner and Morris' (2006) Process-Person-Context-Time Model

It may be noted that this conceptual framework working model is currently lacking detail with respect to experiential learning, as championed by Dewey. This will be remedied in the next section, as Beard and Wilson's (2018) experiential education "combination lock" structure is placed inside Bronfenbrenner's system of the "child" to strengthen the theoretical framework of the study.

The LCL Model recognises interlinked processes of learning and teaching within environmental influences in meaning-making (Beard 2008). It builds on Kolb's (1984) Experiential Learning Cycle to apply the consciousness and subjective experiences that occur during the learning process (Beard 2008). However, it ought to be noted that this model is intended to be used as an aide-mémoire, rather than a mechanical application to learning and teaching (Beard and Wilson 2003). The following paragraphs introduce the reader to this practical, research-based approach to experimental education experiences.

Experiential learning experiences require more than simple add-in activities to a lesson. Instead, teaching should include complex interactions which involve sharing, telling, showing, doing, building, solving, and creating (Beard and Wilson 2018). In addition to creating the learning experiences listed above, matters of place and space, the use of appropriate activities, awareness of social and emotional dynamics, and mindful sensory stimulation that stretch the capacities of intellect and create challenging goals and aspirations should be considered (Beard and Wilson 2018). Bronfenbrenner argues that learning is influenced by conscious and subconscious thoughts that contribute to the construction of self which continually shifts over time (Bronfenbrenner 1979). Thus, the lived experience of the child has a deep impact on knowledge acquisition, therefore, the child at the centre of the Bio-ecological Model may be unable to "hear" experiences if the environment does not "speak" to him/her as he/she cannot attach meaning to it (Beard and Wilson 2018, p. 59). Challenges of high pupil-teacher ratio, the demand for quick results, and tangible evidence of progress drive knowledge of prescribed subject matter and displace child learning needs from the centre of focus (Dewey 1933). Indeed, it should be noted that learning and teaching in Irish primary schools are in danger of becoming focused on the acquisition of academic skills alone (Hayes and Kernan 2008; Ring and O'Sullivan 2018). Thus, there is a risk that the child will become focused solely on achievement and may lack the ability to problem-solve and create their own reactions (Dewey 1933). However, it is unclear whether experiential learning processes experienced during discovery or problem-solving in one subject

area lead to proficiency in another, or whether such an education promotes good thinking or rationality (Barrow and Woods 2006), which reflects Dewey's (1933) argument that there is no single method of mastering a subject. Instead, a balanced approach to education is necessary, as the child requires academic attainment to access autonomous learning and make independent and critically informed decisions (Noddings 2003; Barrow and Woods 2006; Swann 2012).

Previously, Kolb's (1984) Experiential Learning Cycle provided a framework for this pedagogical approach, however, it is now criticised due to the simplified illustration of the learning process and the lack of research available to support it (Beard and Wilson 2018). Instead, Beard and Wilson (2018) argue that their LCL Model provides a more in-depth and robust approach to design and deliver experiential learning experiences. In this model, the child is represented by a rope placed in a circle. This rope is the human interface between the inner and outer worlds of a person where the senses of sight, smell, touch, taste, and sound are processed. An additional sense of space recognition is also provided here. The inner self of the person is created initially through the quick and emotional response to sensory data and is then filtered through additional slower rational responses. The LCL is placed at the centre of the Bronfenbrenner's (1979) Bio-ecological Model in Figure 1.5, below, to illustrate that learning contributes to the development of the self within the child (Beard and Wilson 2018). Constant interactions between inner and outer worlds create a flow of experiences, which is discussed in further detail in Section 1.5.3.4.
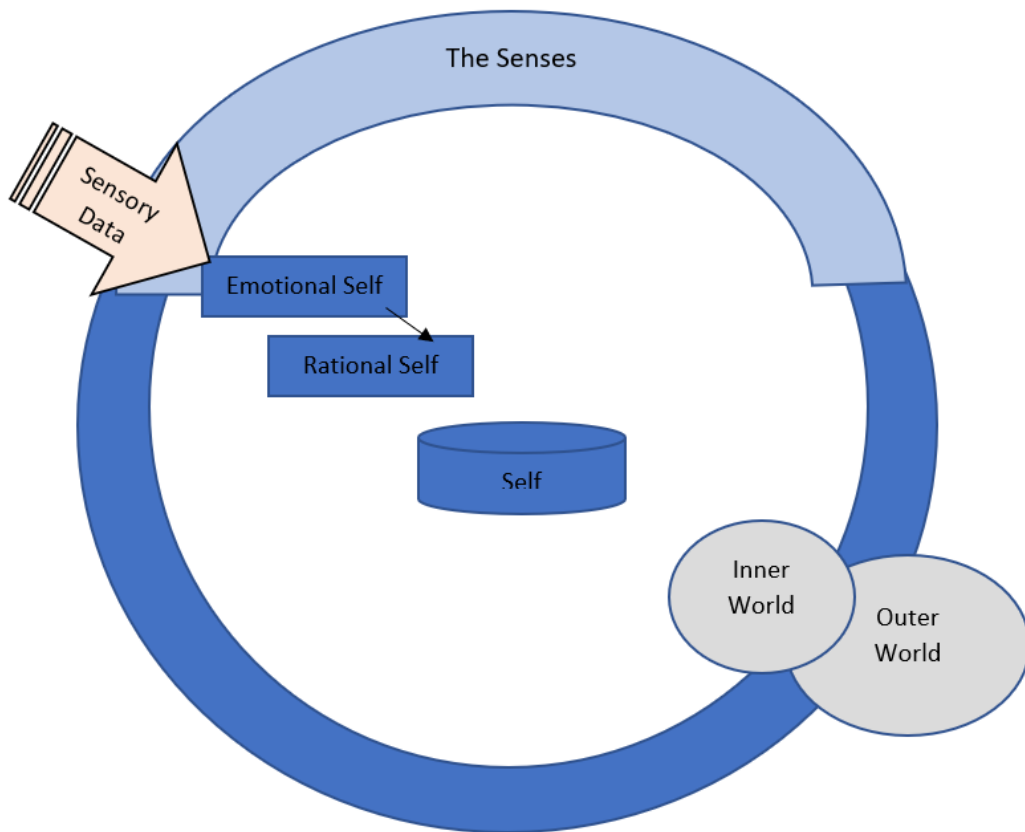
Figure 1.5 Learning Combination Lock Model (Beard and Wilson 2018)

While this LCL model sits within the person at the centre of the Bio-ecological Model, the situational context in which FS occurs must be also considered (Bronfenbrenner 1979; Bronfenbrenner and Morris 2006). Therefore, the space in which learning and teaching occur during FS is explored through Lave and Wenger's (2016) LLP Model in the following section.

1.5.3.3 Situating the Bio-ecological Model in the Context of Lave and Wenger's (2016) Legitimate Peripheral Participation

Lave and Wenger (2016) advocate for real-life contexts in which successful learning and teaching can take place. However, it is the social engagements that occur within these productive learning spaces which are central to their LPP model (Lave and Wenger 2016). Here, learning occurs in the context of a CoP, where the child participates in the actual practice of an expert, but only to a limited degree, and with partial responsibility. The child is located at the edge of the CoP, as they watch and do as the expert at the centre does until they master the technique and become an expert themselves, as illustrated in Figure 1.6. Real-life skills are acquired that the child can then perform and reapply in later contexts. This should not be confused

with Foucault's (1969) all-knowing master and unequal power relations must be addressed in systematic data-analysis (Lave and Wenger 2016). Instead, learning is an evolving form of membership that involves the child's holistic identity and views verbal meaning as the product of the interpretive activities of the speaker (Lave and Wenger 2016).
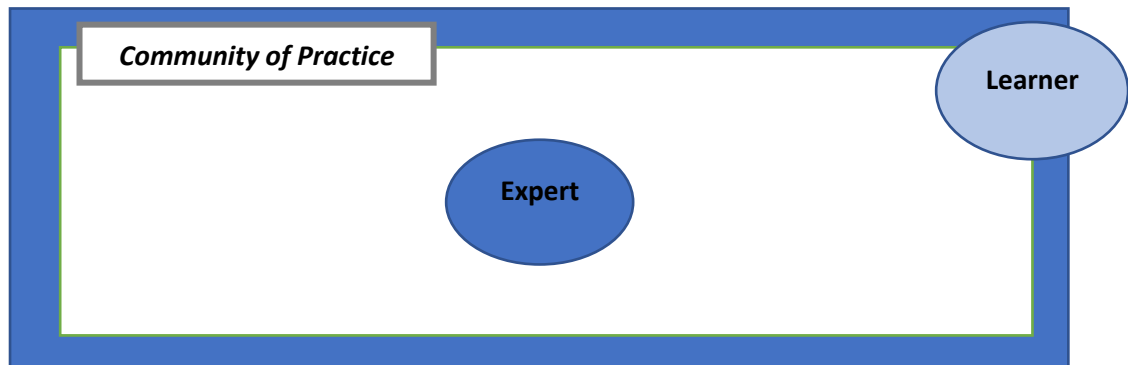
Figure 1.6 Legitimate Peripheral Participation (Lave and Wenger 2016)

Didactic instruction is not advocated in this model; instead, participation indicates learning (Lave and Wenger 2016). The structure of this model focuses on the child's participation during social practices to avoid creating a non-personal cognitive view of knowledge, skills, tasks, activities, and learning (Lave and Wenger 2016). The LPP model provides a framework in which the Bio-ecological Model can sit within. Data are gathered and recorded in a CoP within a mesosystem in this study.

The final section of this chapter focuses on the time structure in which learning and teaching during FS occur in this study through Cornell's Flow Learning Model (1998).

1.5.3.4 Time as The Flow Method of Learning within the Forest School Approach

The chronological progression of a FS session may be structured according to Cornell's (1998) learning stages (Cree and McCree 2013). Cornell's (1998) approach has developed from Csikszentmihalyi's (1975; 1990; 1996) theory of flow learning. This theory argues that when a child engages in an activity that is suitably challenging, he/she will enter a flow state of mind as he/she experiences discovery and creativity, which transports him/her to a higher level of performance, as illustrated in Figure 1.7 below.

High	Anxiety	Arousal	***Flow***
Challenge level	Worry		Control
Low	Apathy	Boredom	Relaxation
	Low	**Skill level**	*High*

Figure 1.7 Increasing Complexity of Consciousness in Flow Experience

(Csikszentmihalyi 1975; 1990; 1996)

Flow learning provides the child with an enjoyable learning experience during play, art, pageantry, ritual, and/or sport, as each activity requires a skill of learning that facilitates concentration and participation (Csikszentmihalyi 1975; 1990; 1996). The flow state of learning was guided by the natural orbit of the Sun around Earth in this FS case study. This structure allowed the FSL to plan a dynamic flow of educational experiences during learning and teaching, as illustrated in Figure 1.8 below (Cornell 1998; Young et al. 2016).

Figure 1.8 The Natural Cycle of Flow Learning (adapted from Young et al. 2016)

In this natural cycle of flow learning, the FS session can be structured as four stages of teaching (Cornell 1998). Games and activities create energy and awaken enthusiasm in a playful stage one. Stage two serves as a bridge between the playful high energy of stage one and the quiet, focused attention of stage three. It includes games that encourage children to become aware of the natural context in which they are in. In these games, one of the senses (touch, sight, or hearing) is isolated to encourage the child to focus on that specific sense. An example of this occurs in a game that isolates hearing, thus, encouraging the child to listen carefully to the sounds in the environment. This leads to stage three, where the experience of the surroundings is approached in a fresh way, having isolated certain senses. Finally, stage four consists of activities that bring closure and completeness to the FS session. The children can share their learning experiences, which is encouraged to reinforce their sense of wonder and conclude the session. The four stages of learning in Cornell's (1998) flow learning are illustrated in Figure 1.9 below
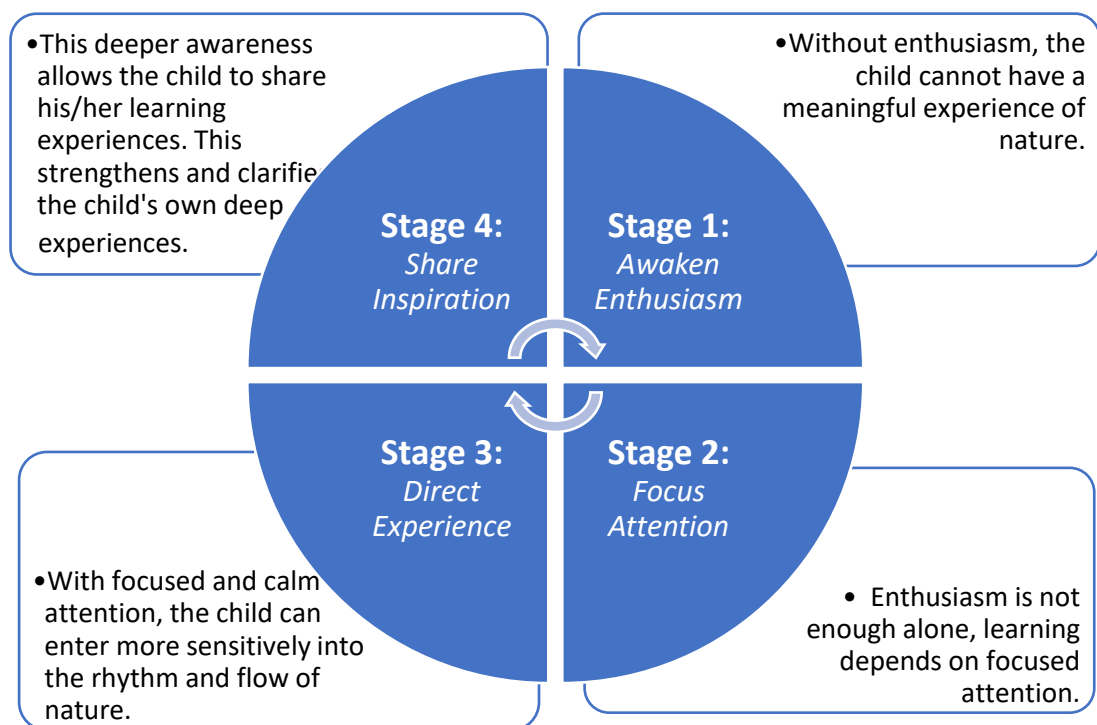
Figure 1.9 The Four Stages of Cornell's (1998) Flow Learning

Cornell's (1998) flow learning method is placed within Bronfenbrenner's (1979) chronosystem to provide a flow to the time in which learning occurs during the FS session in this research. The child's learning sits within the activities and observations that occur during this time frame, as illustrated in Figure 1.10.
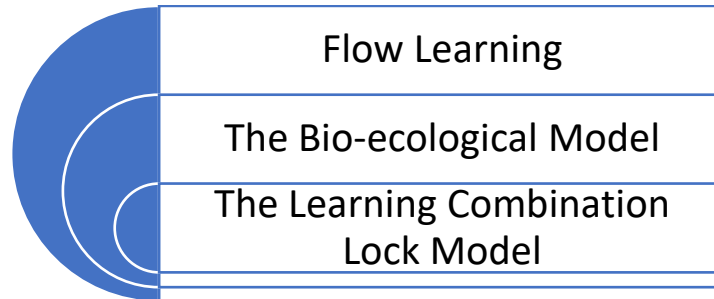
Figure 1.10 Flow Learning within the Conceptual Framework

In conclusion to this section, the conceptual framework of the research, while consisting mainly of Bronfenbrenner's (1979) Bio-ecological Model and Bronfenbrenner and Morris' (2006) PPCT elements, incorporates Dewey's philosophical theories (1897; 1900; 1902; 1916; 1933; 1934; 1938a; 1938b; 1958) and research-based models regarding experiential learning, flow and space-based learning. This conceptual framework is illustrated in Figure 1.11 below. An overview of the application of this model to stages of the research is provided in Appendix A.1.
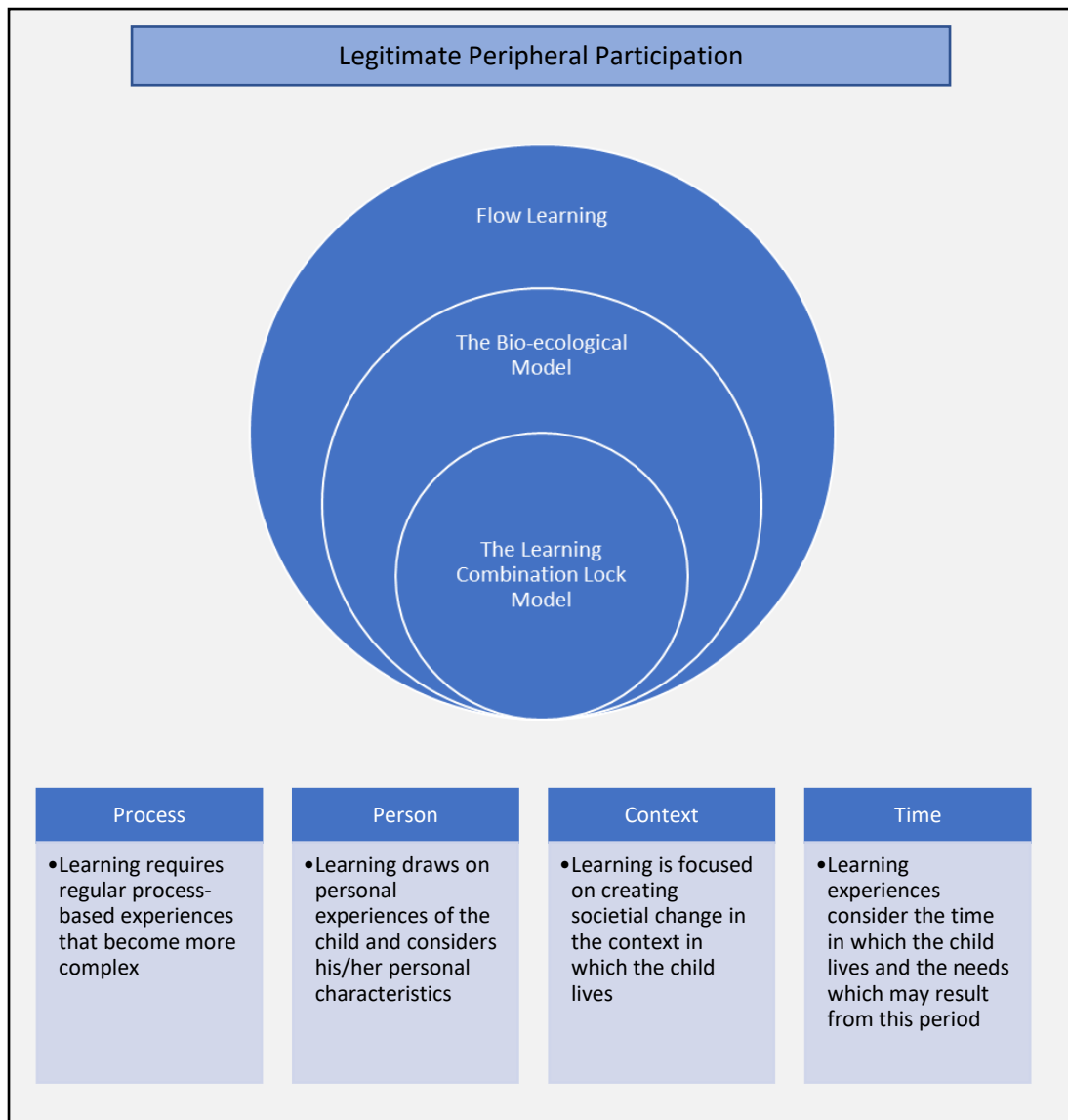
Figure 1.11 The Conceptual Framework of the Study

The researcher acknowledges that this model is not without limitations. Dewey (1902; 1916; 1934) considers the child a competent and capable learner who is guided by an experienced and knowledgeable teacher and omits the importance of opportunities to initiate and sustain a social pretence with peers (O'Sullivan and Ring 2021). Recent progressions suggest family, school, and community systems ought to overlap in Bronfenbrenner's (1979) Bio-ecological Model to further demonstrate an importance of parental involvement in activities to ensure home learning is aligned with those in the educational setting (Epstein 2018, cited in Ring and O'Sullivan 2021). However, O'Sullivan and Ring (2021) highlight that childhood education is at risk of becoming solely underpinned by evidence-based practice. Exclusion of core

educative philosophical principles during the standardisation of knowledge attainment "fragments joy and learning… as children are subjected to content and pedagogy ill-suited to their needs" (O'Sullivan and Ring 2021, p.2). Moreover, the adoption of broad learning outcomes advocated in the restructured Irish PSC (NCCA 2020) may lend itself to interpretation, thus, it is imperative that teachers hold an understanding of both philosophical, and researcher-based positions to demonstrate an interconnectedness in practice to foster broader and richer experiences for children (O'Sullivan and Ring 2021).

1.6 Conclusion

First and foremost, this chapter provided a chronological exploration of the researcher's personal identity, positionality, interests, and goals related to education. The reader was introduced to the initial growth of the research questions, specifically the need for a critical understanding of the FS approach to learning and teaching in the context of the Irish PSC. The literature highlighting the importance of the natural world in developing the child's perceptions of his/her local environment to create deep connections with nature was briefly described. In addition to this, the reader was introduced to the concept of the FS approach to learning and teaching and the six guiding principles that underpin this philosophy. Benefits to social, emotional, and academic learning outcomes outlined in previous studies were noted, along with the recognition of the need to engage in further systematic research. An in-depth exploration of this literature is discussed in the following chapter: Review of the Literature.

This conversation was then grounded in a combination of philosophical and research-based theories to create a conceptual framework in which the research questions were guided. Bronfenbrenner's (1979; Bronfenbrenner and Morris 2006) Bio-ecological PPCT theory formed the initial model to explore the research questions within, while Dewey's philosophical theories (1897; 1900; 1902; 1916; 1933; 1934; 1938a; 1938b; 1958) were used to initiate a discussion on experiential, problem- and inquiry-based learning and teaching approaches. Additional research-based models of practice: LCL, LPP, and flow learning methods (Cornell 1998; Lave and Wenger 2016; Beard and Wilson 2018) were then applied to the aforementioned

philosophical frameworks to create firm theoretical foundations in which the research questions outlined in Chapter Three were explored with respect to children's and teachers' perspectives on the FS approach to learning and teaching in the context of the Irish PSC. It is understood that these theories require a further evidence base, and the researcher agrees with O'Sullivan and Ring (2021) that "a reconcilable schism rather than an irreconcilable severance between philosophical and research-based positions" exists (p.1), thus, this study draws on a multitude of philosophical and empirical perspectives which have the potential to foster broader and richer experiences in informing curricula and pedagogy (Ring and O'Sullivan 2018).

The following chapter introduces the reader to the history and development of the PSC within the context of Irish policy and history. References to the outdoors in this curriculum are detailed, prior to an introduction of the history and adaption of the FS approach to learning and teaching. Educational theory and pedagogical processes guiding the FS approach are interrogated to analyse if this approach can realise the vision, aims, principles, broad objectives, subject content objectives, concepts and skill development, and assessment of the Irish PSC prior to an exploration of the research methodology employed in Chapter Three.

Review of the literature

The Beech Tree

2.1 Introduction

This chapter, titled "The Beech Tree", builds on the metaphor of "The Forest Floor" explored in the previous introductory chapter. Naturalised trees, such as beech trees, differ from native trees as they are imported varieties that were transported to Ireland in the last 1,000 years. One could say that the concept of a naturalised Irish forest is a metaphor for the adaptation of Scandinavian philosophies underpinning the Forest School (FS) approach to learning and teaching in a new culture.

Figure 2.1 The Beech Tree (Murphy 2019)

This chapter endeavours to situate the reader within the historical and policy contexts of the Irish Primary School Curriculum (PSC) (National Council for Curriculum and Assessment (NCCA) 1999a). It includes an exploration of the vision, aims, principles, broad objectives, subject content objectives, concepts and skill development, and assessment in the Irish PSC which frame the guiding questions within this research study. The chapter also includes a critical analysis of FS in which the pedagogical theories that underpin high-quality educational practice are

explored to examine whether this approach to learning and teaching can complement key principles of the Irish PSC.

2.1.2 The Method and Processes used to conduct the Literature Review

The literature review was constructed according to Creswell's (2009) design. Key words were identified to provide direction in initial literature searches and a literature map was produced to direct and structure the discussion and provide a basis for advancing the research questions employed. An initial broad database search using relevant terms ("Forest School", "Forest School Early Years", "Woodland School", "Danish School Early Years", "Danish Education Early Years", "Outdoor Education Early Years", "Outdoor Learning", "Skovbornehave" (Danish Forest Kindergarten), "Udeskole" (Danish Outdoor Education), "Curricular development", "Ireland", "Primary" and "Irish", "Aistear" and "Outdoor Aistear") was conducted in a range of databases ("Academic Search Complete", "Education Source", "Ebrary", "Ebsco", "Childlink", "Learntechlib" and "Google Scholar"). Some useful peer-reviewed journals that were sourced in this initial search were included in the literature review; however, this search was not specific enough and the author created a more refined search. Articles were selected in key databases ("EBSCOhost", "Academic Search Complete", "PsycINFO" and "ERIC"), using a restricted search parameter ("Experiential Education", and secondary terms "Early Years" and/or "Forest School"). Contemporary, peer-reviewed research journals created over the past twenty-year period that were most relevant to this review were selected to ensure the literature review remained current. Although the author initially intended the studies to remain European in nature to ensure that previous research was located in a similar climate and culture, there were some studies based in the United States of America (USA) and Australia that were too relevant to be ignored. Some items which focused on different settings, such as post-primary education, were deemed not relevant. Of the remaining items, the most appropriate studies were selected. Grey literature, such as policy documentation, was included where appropriate, and educational reports obtained from the Irish Department of Education and Skills (DESb) website (www.education.ie) and the NCCA website (www.ncca.ie) with filtered search terms ("Curriculum" and "Primary") were utilised. Additional readings cited in these reports were sourced. Specific topics ("Pedagogy"

and "The Role of the Teacher") were also researched in the Mary Immaculate College (MIC) library database. Books referenced in recent studies, recent conference papers, and dissertation abstracts related to the study were consulted. A sceptical approach was maintained throughout, as advised by Thomas (2009), and the researcher aimed to keep an open mind to the many interpretations and arguments that were evident in the literature. This process was consistently grounded in theories and established views outlined previously and throughout this chapter that were relevant to the study. The author then identified key words and designed a literature map based on the metaphor of "The Beech Tree" which contained draft summaries that helped form the structure of this chapter, which is included in Appendix B.1.

This review of the literature begins in the policy and historical contexts prior to and during the creation of the Irish PSC, as introduced in the following section.

2.2 Situating the Irish Primary School Curriculum in Policy and History

Strong emphasis was placed on literacy and numeracy learning outcomes in Irish state-supported national schools of the 18th century (Coolahan 1981; Bennett 2006; Walsh 2012). However, practical and child-centred educationalists of the 1900s, inspired by Locke (1690; 1693) and Rousseau (1762), challenged this system, and as a result, changes ensued (Coolahan 1981; Bennett 2006; Walsh 2012). In 1897, a report from the Belmore Commission recommended the inclusion of a wide range of curricular subjects and an emphasis on kindergarten education in the early years (Coolahan 1981). Ultimately, these proposals led to the development of The Revised Programme for National Schools in 1900. This curriculum provided teachers with autonomy to adapt and suit the curriculum to their local context and integrate learning approaches (Coolahan 1981). Nevertheless, challenges, namely initial teacher education (ITE) qualification levels and funding issues impacted on the implementation of core messages of The Revised Programme for National Schools (Coolahan 1981; Bennett 2006; Walsh 2012). These difficulties were highlighted in The Dale Report in 1904, and as a result, the Department of Education was established in 1924 with the subsequent introduction of the compulsory Primary Certificate Examination in June 1943 (Coolahan 1981).

New thinking regarding the purpose of education, inspired by theorists such as Dewey (1897; 1900; 1902; 1916; 1933; 1934; 1938a; 1938b; 1958) and Montessori (1949), evolved across Europe in the 1960s (Walsh 2012). At this time, Ireland was a member of The Organisation for Economic Co-operation and Development (OECD), The United Nations (UN), The Council of Europe, and The United Nations Educational, Scientific and Cultural Organisation (UNESCO) and aspired to become a member of The European Economic Community (EEC); thus, educational reform was necessary to reflect progressions in educational theories (Hogan 1995; Brown 1985; Walsh 2012). The Plowden Report, released in 1967, highlighted the need for individual difference, flexibility within the curriculum, interaction with family background and environmental influences, learning through activity and discovery, and the integration of school subjects (Cullingford 1989). This report formed the basis of the 1971 curriculum, known as "Curaclam na Bunscoile", and gave force to the idea that social and emotional development were of equal importance to academic and intellectual achievement (Cullingford 1989). Moreover, Curaclam na Bunscoile (1971) placed an emphasis on the child as an individual, and its function was to cater for the full and harmonious development of each child. The ideologies of child-centred education and the importance of childhood were valued in this new curriculum (Walsh 2012). Since this new curriculum provided greater flexibility than its predecessor: The Revised Programme, principals and teachers were empowered to make decisions that accounted for children's interests, as well as the school environment and facilities. While core subjects of English, Gaeilge (Irish), Mathematics, and Religion remained, the focus of these subjects changed as methodologies evolved and were consonant with modern educational and psychological trends (Walsh 2012). In addition to this, the inclusion of subjects: Music, Art and Craft, Social and Environmental Studies, and Physical Education (PE) provided a holistic approach to learning and teaching (Curaclam na Bunscoile 1971). However, challenges associated with educational disadvantage, health and social services, early childhood education (ECE), continuity to post-primary education, children with additional or special educational needs, the standard of school buildings, class sizes, teacher education, and teacher attributes impeded the implementation of this curriculum (Walsh 2012).

The following section grows from the historical roots explored previously, to discuss developments which influenced the 1999 Irish PSC (NCCA 1999a). Currently, this curriculum guides learning and teaching in Irish primary schools recognised by the DESb (NCCA 2020).

2.3 The Irish Primary School Curriculum

The Irish PSC (NCCA 1999a) was formed following the publication of The Quinlan Report in May 1990. At the time, there was a growing awareness of the Rights of the Child[8] (UN 2010); therefore, this curriculum advocated an entitlement to access, opportunity, identity, individuality, and inclusion (Walsh 2012). While the PSC brings forward child-centred visions from the previous Curaclam na Bunscoile (1971), O'Rourke (2018) argues that these core messages have become suppressed due to an overload of many elements. The following sections will now delve deeper into the exploration of the vision, aims, principles, and subject areas of the PSC to provide the reader with a greater understanding of these many elements.

2.3.1 The Vision and Aims of the Irish Primary School Curriculum

The vision of the PSC is focused on nurturing the needs of the child so that he/she can be a member of an ever-changing Irish society, and it is envisioned that this will ensue when learning and teaching occur in a stimulating environment (NCCA 1999a). Social development and active engagement are promoted to develop the child's self-confidence in his/her learning abilities (NCCA 1999a). The defining characteristic of this vision is a developmental approach with an emphasis on learning through relevant, broad, and balanced content, which is expressed in the form of three general aims, as outlined in Figure 2.2 below.

---

[8] The United Nations Convention on the Rights of the Child (1989) is a binding agreement adopted by the United Nations General Assembly and signed by Ireland in 1990. The Irish State is committed to promote, protect and fulfil the rights of children to ensure that every child has the right to life, survival and development, his/her best interests are a primary consideration and each child's views are considered and taken into account in all matters affecting him/her (UN 2010).
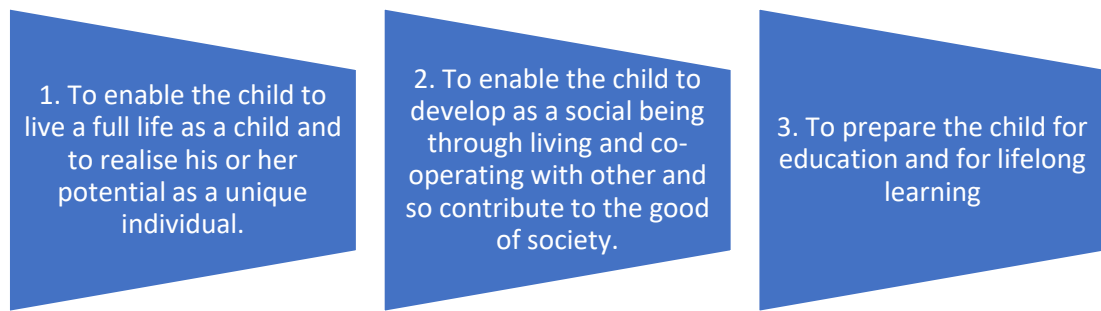
Figure 2.2 The Aims of the Irish Primary School Curriculum (National Council for Curriculum and Assessment 1999a, p.7)

The first aim outlines the importance of the uniqueness of the child as expressed in his/her personality and intelligence (NCCA 1999a). All dimensions of the child's life, including spiritual, moral, cognitive, emotional, imaginative, aesthetic, social, and physical elements, must be nurtured to provide enrichment and lay the foundation for happiness and fulfilment in his/her future (NCCA 1999a). Aim two highlights the importance of personal skills to support the development of the social and emotional dimensions of a child's life (NCCA 1999a). Here, the child is viewed as part of the society in which they live, placing importance on relationships at home and with other people in the child's life (NCCA 1999a; Rozsahegyi 2018). The final aim is concerned with the preparation of the child for lifelong learning, and the PSC endeavours to develop the whole child, spiritually and morally, to foster an ethical sense that will enable them to acquire cultural values and attitudes of a changing Irish society. Although the PSC aims are founded on positive, holistic developmental values, it may also be argued that elements of function theory underpin these core messages. Function theory, in which a society moulds and trains its members to be productive and to perform required roles, views school as a means of transmitting culture to children so that they can perform successfully in the adult world (Ballintine and Hammack 2009). Children learn skills and values, such as obedience, punctuality, perseverance, and respect that are necessary to become productive, law-abiding citizens who are successful in school and the workplace (Frankena, cited in Wilson 1977; Ballintine and Hammack 2009).

2.3.2 Principles of the Irish Primary School Curriculum

In addition to the PSC vision and aims, fifteen key principles underpin all curricular subject areas. These principles are listed in Figure 2.3 below.

1. The child's sense of wonder and natural curiosity is a primary motivating factor in learning
2. The child is an active agent in his or her learning
3. Learning is developmental in nature
4. The child's existing knowledge and experience form the base for learning
5. The child's immediate environment provides the context for learning
6. Learning should involve guided activity and discovery methods
7. Language is central in the learning process
8. The child should perceive the aesthetic dimension in learning
9. Social and emotional dimensions are important factors in learning
10. Learning is most effective when it is integrated
11. Skills that facilitate the transfer of learning should be fostered
12. Higher order thinking and problem-solving skills should be developed
13. Collaborative learning should feature in the learning process
14. The range of individual difference should be taken into account in the learning process
15. Assessment is an integral part of teaching and learning

Figure 2.3 The Principles of the Irish Primary School Curriculum (National Council for Curriculum and Assessment 1999a, pp. 8 - 9)

The principles of the Irish PSC envision the child to be cognitively, physically, emotionally, and creatively engaged to denote ownership over the process of understanding (Dewey 1902; 1916; 1933; 1934; 1938a; 1938b; Murphy 2004). Active discovery-based learning places importance on the child's lived experience to allow him/her to create knowledge (Cohen et al. 2004; Forman and Fyfe 2012; Schunk 2012). New learning and understanding are deepened through scaffolded explorations of concepts and skills (NCCA 1999a). Interactions between the child and his/her environment influence development and learning; therefore, there is a need for high-quality educational contexts and resources to ensure educational spaces provide deep levels of stimulation (Mannion et al. 2013; Maynard et al. 2013; Morgan 2018). The teacher facilitates the child to appreciate aesthetic dimensions in these

environments through creative responses and expression while encouraging higher-order thinking and problem-solving skill development (NCCA 1999a). Social and emotional dimensions of child development remain central to this curriculum (NCCA 1999a) and the child constructs meaning from social cues during talk and discussion as he/she creates active interpersonal connections and displays increased social competence (Bronfenbrenner 1979; Cohen et al. 2004; Waite 2011; Schunk 2012; Rozsahegyi 2018).

Acceptance of individual differences is fostered during collaborative and integrated approaches to learning and teaching, and the PSC outlines the importance of inclusion for the needs of all children through adapted teaching methodologies and strategies (NCCA 1999a; NCCA 2007; DESb 2017a). It is the responsibility of the teacher to ensure that the complex learning needs of children are met by rich and varied learning processes (NCCA 1999a; DESb 2007; 2017). Therefore, all teachers should implement teaching approaches and methodologies that facilitate meaningful inclusion of children with special educational needs (DESb 2007; 2017). This facilitation occurs through differentiated learning objectives in which all children participate in tasks they find challenging (Didau 2007; DESb 2017a; Department of Children and Youth Affairs (DCYA 2019). Recent advancements advocate the creation of equal learning opportunities while planning for differentiation, which are created through multiple means of engagement with new learning, multiple means of representation of new information, and multiple means of action and expression to demonstrate new learning, as illustrated in Figure 2.4 below (Ahead 2020).
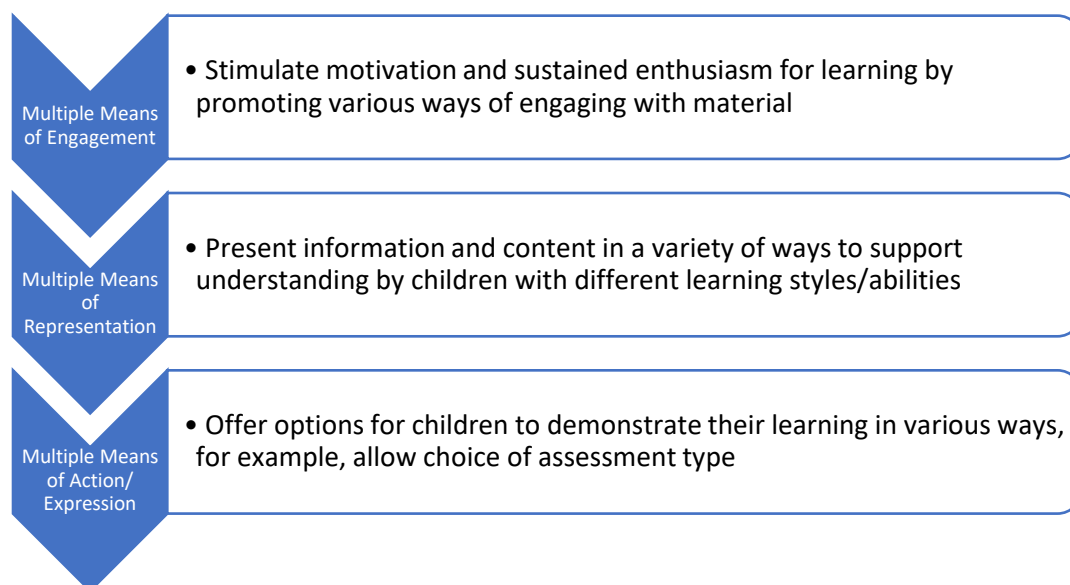
Figure 2.4 Universal Design for Learning (Ahead 2020)

Assessment, the final principle of the PSC, is fundamental to learning and teaching in the Irish PSC (NCCA 1999a) to "build a picture over time" (NCCA 2007, p.7) of the child's progress and/or achievement. It forms information about *how* a child learns (process) and *what* the child learns (product). The four assessment functions in the Irish PSC (NCCA 1999a; 2007) are outlined in Figure 2.5 below.
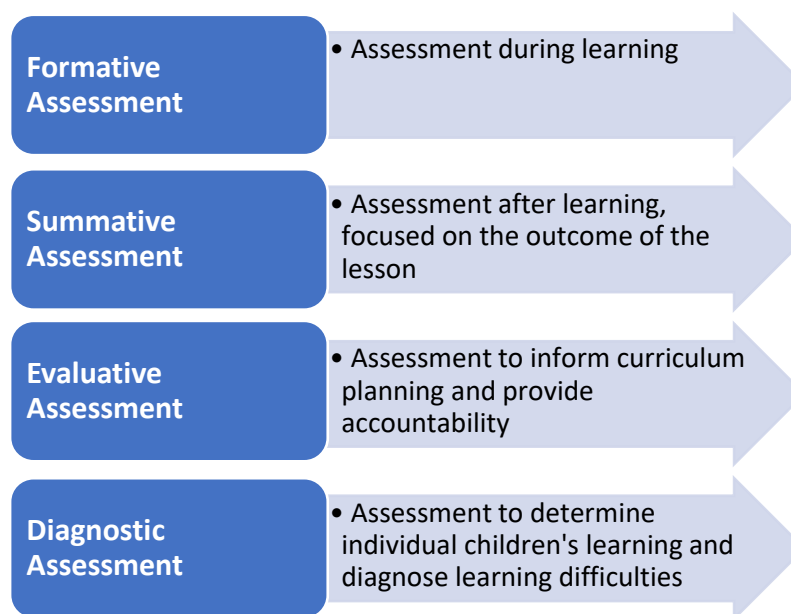
Figure 2.5 The Four Functions of Assessment (National Council for Curriculum and Assessment 1999a; 2007)

Recent NCCA (2020) publications streamline this continuum to three types of assessments: intuitive, planned, and assessment events. Although intuitive assessment is unplanned and ongoing, learning outcomes and competencies form the basis of this process. Planned assessment methods incorporate records, while assessment events are distinct, such as standardised testing. In addition to this, supporting guidelines for assessment in the PSC focus on two other principal approaches to assessment titled "Assessment for Learning" (AfL) and "Assessment of Learning" (AoL) (NCCA 2007, pp. 8-9). These two aspects of assessment are illustrated and explained in Figure 2.6, below.

Assessment for Learning
- The teacher uses evidence on an ongoing basis to inform learning and teaching

Assessment of Learning
- The teacher periodically records children's progress and achievement for the purpose of reporting to parent(s)/guardian(s) and other relevant persons
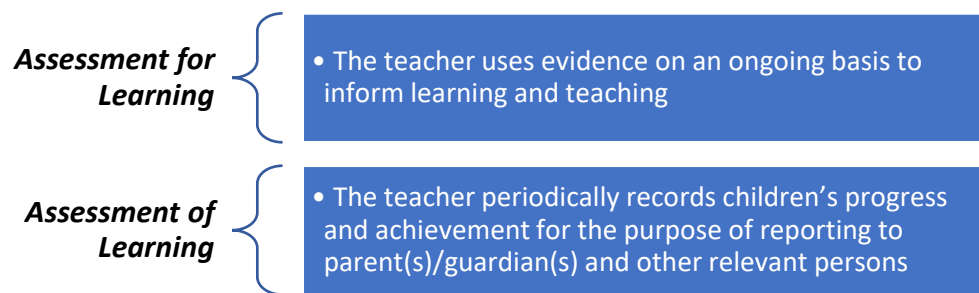
Figure 2.6 The Two Aspects of Assessment (National Council for Curriculum and Assessment 2007, p.8)

Assessment provides the teacher with information to make important decisions regarding learning and teaching, namely selecting curriculum objectives, identifying appropriate teaching methodologies, designing learning activities, choosing suitable resources, differentiating learning, and providing children with feedback on how they are achieving (NCCA 2007; 2020; Ahead 2021). The methods advocated range through a continuum of child-led assessment strategies of self-assessment, conferencing, portfolio assessment, and concept mapping, to teacher-designed assessment approaches, namely questioning, teacher observation, teacher-designed tasks and tests, and standardised testing (NCCA 2007; 2020).

The Irish PSC is further subdivided into eleven curricular subject areas, each containing subject-specific skills and content, which are explored in the following section.

2.3.3 Curricular Subject Areas

The PSC is constructed into eleven curricular subjects, which are delivered through strands, strand units/elements, broad objectives, content objectives/learning outcomes, and concepts and skills (NCCA 1999a; 2016). These eleven subjects are illustrated below in Figure 2.7.

English	Gaeilge	Mathematics	Geography
History	Science	Visual Arts	Music
	Drama	Physical Education	Social, Personal and Health Education (SPHE)
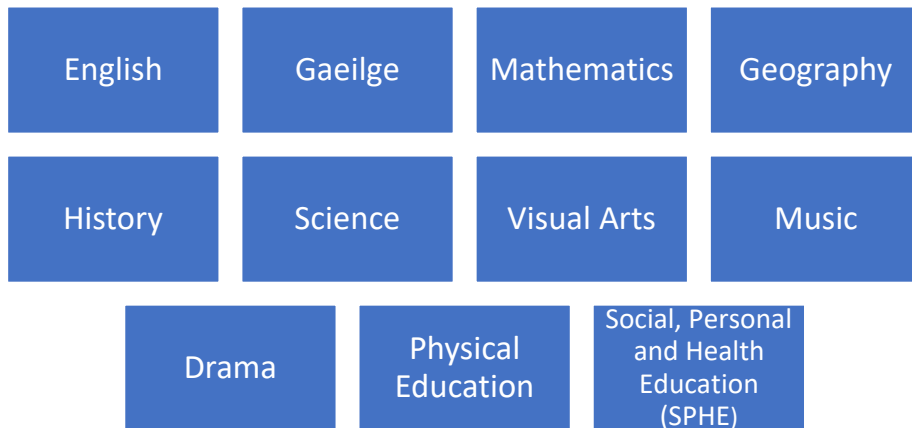
Figure 2.7 Subjects of the Irish Primary School Curriculum (National Council for Curriculum and Assessment 1999)

Some of these subjects are grouped into curricular areas of Literacy, The Arts, and Social, Environmental, and Scientific Education (SESE), as outlined in Figure 2.8 below.

Literacy	The Arts	Social, Enviornmental and Scientific Education (SESE)
English	Visual Arts	History
Gaeilge (Irish)	Music	Geography
	Drama	Science
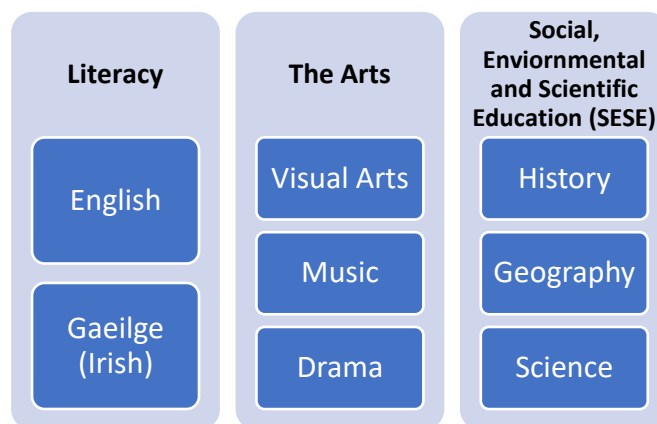
Figure 2.8 Curricular Subject Groupings (National Council for Curriculum and Assessment 1999a; 2016; 2019)

2.3.4 Recent Curricular Developments

Although most of these subjects are contained within the original 1999 Irish PSC, recent developments include the Primary Language Curriculum (PLC) (NCCA

2016; 2019), the Primary Mathematics Curriculum (NCCA 2018b) and Aistear: The Early Childhood Curriculum Framework (NCCA 2009a) in ECE years. The PLC situates itself within the current vision, aims, and principles of the PSC, while creating continuity in learning outcomes through progression steps from ECE to post-primary school settings. Language learning in English and Gaeilge (Irish) is now integrated and connected with the specific environment within which it occurs. A future release of the Primary Mathematics Curriculum aims to promote positive learning dispositions and development of mathematical proficiency (NCCA 2018b). It is anticipated that this document will be released in the coming months. Currently, a review and redraft of the Irish PSC is underway (NCCA 2020). This draft curriculum framework aims to address issues such as curriculum overload and the meaningful use of assessment to inform teaching and learning (NCCA 2020). It holds values of the children's enjoyment of learning, an increased use of active learning methodologies and improved attainment levels in Literacy (reading), Maths, and Science advocated in the Irish PSC (NCCA 2020). However, as schools and curriculum are often viewed as a critical site for responding to national priorities or to address societal problems (Dewey 1916; Ring et al. 2021), a need for an increase in existing time allocated to SPHE and PE, and a greater emphasis on well-being in outlined (NCCA 2020). Furthermore, this new curriculum will adopt broad learning outcomes, instead of detailed content objectives (NCCA 2020). It aims to address global issues, such as climate change and sustainability and illustrate the importance of dispositions and skills, such as resilience, creativity, innovation, and critical thinking in young and future generations (NCCA 2020). Moreover, this redeveloped curriculum aims to support schools in responding to a diverse society in Ireland to ensure children feel respected, valued, and engaged in learning through appropriately tailored experiences in the school community (NCCA 2020).

Play-based learning approaches are introduced to the Irish PSC in Aistear: The Early Childhood Curriculum Framework (NCCA 2009a), which is explored throughout the following sections.

2.3.4 Playful Pedagogies

A playful approach to learning and teaching encourages the child to participate in processes that involve many aspects of higher-order thinking, problem-solving, creativity, social development, and independent learning skills (Froebel 1826; Steiner 1916; Dewey 1933; Montessori 1949; Bennett 2006; Moyles 2008; Gray 2013b; Knight 2013; Robinson 2015; Sahlberg and Doyle 2019). Play extends previous socioemotional and academic skills and knowledge through integrated learning experiences that involve all aspects of a child's development: cognitive, social, physical, and emotional (Walsh et al. 2006; Ashiabi 2007; Han et al. 2010; Whitebread 2010; Weisberg et al. 2013; Pyle and Danniels 2017). Moreover, children set their own level of challenge during play through self-directed experiences (Brock et al. 2009; Whitebread 2010), and as a result, can contest and deconstruct power structures and subjectivities that are assigned by adults (Wood 2010). Therefore, children learn through play in more effective ways than direct instruction alone (Walsh et al. 2006; Ashiabi 2007; Han et al. 2010; Weisberg et al. 2013; Pyle and Danniels 2017).

Evidence of links between play and the child's ability to master academic skills in literacy and numeracy is beginning to emerge. However, tensions exist between the structure of a curriculum and emergent experiential play-based approaches to learning (Kernan and Devine 2010; Hansen Sandseter et al. 2012; Wood 2013; Hunter and Walsh 2014; Walsh 2017; Sahlberg and Doyle 2019). Furthermore, it has been observed in recent times that due to an increase in standardised education, which advocates the same education for all, the "exile" of emergent, experiential play-based learning has occurred (Noddings 2003; Robinson 2015, p. 94). Thus, a balance in planning proactive and intentional playful pedagogy in accordance with curricular objectives to guide the child's learning, alongside reflexive practice which enables the teacher to reconceptualise and plan play-based learning in child-centred terms is required (Bilton 2003; Kernan and Devine 2010; Hansen Sandseter et al. 2012; Gray 2013a; Wood 2013; Ashman 2014; Hunter and Walsh 2014; Sahlberg and Doyle 2019). However, further issues arise due to broad definitions of play-based learning that have resulted in teacher uncertainty about the implementation of this pedagogical approach (Martlew et al. 2011; Pyle and Danniels 2017; Bubikova-Moan

et al. 2019). Moreover, play varies over time and place due to teachers' beliefs, values, and the different meanings attributed to play (Martlew et al. 2011; Wood 2013; Resnick and Johnson 2020). These uncertainties in understanding playful pedagogies lead to disparities in how play is implemented, as teachers who are unsure of the benefits of play for learning tend to implement free, child-directed, voluntary, and pretend play (Pyle and Danniels 2017). Instead, play-based pedagogy can be viewed along a continuum from child-led free play to adult-guided structured play in which academic content is taught through playful activities. Therefore, child-led play and intentional adult-initiated teaching can be combined to support children's learning (Thomas et al. 2011; Pyle and Danniels 2017; Resnick and Johnson 2020). However, Bubikova-Moan et al. (2019) caution that this should not result in a dichotomisation of play and learning, as observations of play that are interpreted within curriculum learning outcomes and assessment of learning can underestimate children's level of knowledge, skills, and dispositions (Wood 2013). Therefore, responsive and interactive pedagogy common in ECE should be applied in the primary school setting (Martlew et al. 2011; Bubikova-Moan et al. 2019).

Síolta: The National Quality Framework for Early Childhood Education (Centre for Early Childhood Development and Education (CECDE) 2006) outlines guidance on quality aspects of early childhood settings, and Aistear: The Early Childhood Curriculum Framework (NCCA 2009a) provides curricular suggestions for play-based learning and teaching in the Irish PSC. The following section will explore the rationale behind the development of both frameworks before outlining how they can support the planning of quality playful pedagogy.

2.3.4.1 Play-Based Learning and Teaching in the Irish Primary School Curriculum

The White Paper on Early Childhood Education, Ready to Learn (Department of Science (DESa) 1999) outlined the need to support the development and educational achievement of children in Ireland through high quality early education. It proposed a national quality assurance system in which assessment would play an essential role. This paper acknowledged that class size, resourcing, and methodologies were challenges in Irish infant primary class settings and outlined that the forthcoming 1999 PSC would address these issues. It also recognised the

importance of supporting disadvantaged groups and children with special educational needs (DESa 1999). Síolta: The National Quality Framework for Early Childhood Education (CECDE 2006) was developed in response to these concerns. This framework outlines principles and standards of quality early childhood provision, with regard to the rights of the child, environments, parents and family, interactions, play, professional practice, transitions, identity and belonging, and community involvement, which are relevant to curriculum development (CECDE 2006).

In 2009, the NCCA commissioned four research papers to develop an understanding of the impact of education and care on experiences, learning, and development in early childhood (NCCA 2009b). The first paper (Hayes 2007, cited in NCCA 2009b), outlines the need for a greater balance between education and care in Irish ECE settings. Hayes (2007, cited in NCCA 2009b) argues the importance of the teacher's role in this approach and calls for a nurturing type of pedagogy, one that emphasises children's feelings and dispositions, such as motivation, confidence, perseverance, and how they see themselves as learners during play-based learning. The second paper describes children as competent young learners who are capable of making choices and decisions to learn with and from one another (French 2007, cited in NCCA 2009b). In this paper, opportunities for cooperation, playfulness, problem-solving, and conflict resolution through play-based learning are all valued. Furthermore, French (2007, cited in NCCA 2009b) outlines that learning is enhanced through a balance between teacher-initiated and child-led activities and promotes connections with the school setting and the family of the child. The third paper (Kernan 2007, cited in NCCA 2009b), argues that all children have a right to time and space for play, along with opportunities for voluntary, spontaneous, and meaningful play. Kernan (2007 cited in NCCA 2009b), also highlights that during play, children can experience risk within safe and secure boundaries. The final paper explores assessment as collecting, documenting, reflecting on, and using information to develop portraits of children as learners during play (Dunphy 2008, cited in NCCA 2009b). Aistear: The Early Childhood Curriculum Framework (NCCA 2009a) was designed to work alongside ECE and primary school curricula in response, however,

it was created for children up to the age of six years old only. This framework describes dispositions, values, and attitudes, skills, knowledge, and understandings that are important for young children at the junior and senior infant class levels and offers ideas and suggestions on how these may be nurtured (NCCA 2009a). The framework is divided into four themes: Well-being, Identity and Belonging, Communication, and Exploring and Thinking, and learning outcomes are provided within each of these themes.

Síolta: The National Quality Framework for Early Childhood Education (CECDE 2006) and Aistear: The Early Childhood Curriculum Framework (NCCA 2009a) supports learning and development of all children from birth to six years of age through the provision of broad goals, activities, experiences, approaches, and strategies in an emergent, inquiry-based curriculum. The following section will provide a summary of planning guidance, as advised in these frameworks within the context of the Irish PSC.

2.3.4.2 Planning for Play-Based Learning and Teaching in the Irish Primary School Curriculum

Aistear: The Early Childhood Curriculum Framework (NCCA 2009a) provides pedagogical guidance for play-based learning through planning, supporting, and reviewing play, which is outlined as good practice. This section considers types of play as outlined in Aistear: The Early Childhood Curriculum Framework (NCCA 2009a) which include creative play, games with rules, language play, physical play such as exploratory, manipulative and constructive play, and pretend play which comprises of dramatic, make-believe, role play and fantasy play, along with early literacy and numeracy, small world, and sociodramatic play (NCCA 2009a; Kernan 2007, cited in NCCA 2009b).

Planning for play-based learning begins with the creation of a secure learning environment in which play occurs (Bilton 2003; Ephgrave 2018). This includes the people and objects within it and the time available, as these elements influence how children play (Kernan 2007, cited in NCCA 2009b). Within this environment, social skills, such as conflict management, shared fantasy, and the achievement of good will and harmony, must be developed to ensure an inclusive climate in which children's

cognitive, physical, and emotional growth can develop alongside each other (Bilton 2003; Denham et al. 2004; Ephgrave 2018). Moreover, in order for sustained social interaction to occur, skills such as emotional competence and emotion regulation must be developed to resolve conflicts that may arise in play (Cillessen and Bellmore 2004; Denham et al. 2004; Sahlberg and Doyle 2019). Sociodramatic play in itself may support the development of these social cognitive skills as the child negotiates viewpoints with the other players, as outlined in Figure 2.9, below (Lillard 2004; Gray 2013b).

1.
To keep the game going, you have to keep everyone happy

2.
Rules are modifiable and player-generated

3.
Conflicts are settled by argument, negotiation and compromise

4.
There is no real difference between your team and the opposing team

5.
Playing well and having fun really are more important than winning

Figure 2.9 Social and Emotional Development during Non-competitive Play

(Gray 2013b, pp. 158- 162)

A socially competent child in primary school will demonstrate the ability to enter a group dynamic and will be aware when to show emotion (Cillessen and Bellmore 2004; Denham et al. 2004; Sahlberg and Doyle 2019). However, at times, the teacher may be required to intervene in the play to implement the school's behaviour policy (Wood and Attfield 2005; Ephgrave 2018). Although rules should be firm and consistent, they should be kept to a minimum to allow children to relax and provide them with the freedom to play as they wish (Ephgrave 2018). To facilitate optimal

play, Wood and Attfield (2005) recommend that early play experiences be supported through progression and continuity, as "more challenging play is as important as more challenging work" (p. 160). In this situation, the child is following his/her play intentions, and the teacher is simultaneously facilitating new skills, thinking, and understanding through interactions that respect the flow and spirit of the play (Wood and Attfield 2005). Examples of playful teacher/child interactions are presented in Figure 2.10 below.

Communicating and modelling language	Facilitating and setting challenges	Recalling	Encouraging
Questioning	Demonstrating	Explaining	Showing
	Providing a narrative for what he/she is doing	Exploring ideas	
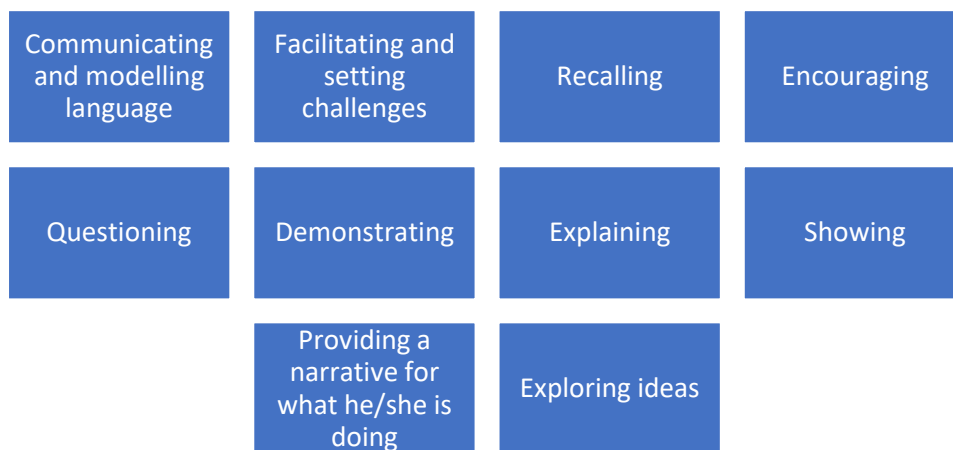
Figure 2.10 Playful Teacher/Child Interactions (Ephgrave 2018, p. 97)

It should also be noted that planning for play-based learning can be impeded by adult-directed activities and the learning of prescribed outcomes, as disparities due to the teacher's core values, professional education and experience, the school culture, educational policies, and cultural expectations can occur (Wood and Attfield 2005; Broadhead and Burt 2012; Greenwood 2017; Sproule 2017). Therefore, while long-term planning for play begins in the strand and strand units of the Irish PSC, short-term plans should be created around high-interest topics of children (Wood and Attfield 2005; Fallon 2017). This emergent planning occurs through a cyclic process of planning, observation, and reflection (Fallon 2017). Moyles' (1989, cited in Wood and Attfield 2005) Play Spiral, illustrated in Figure 2.11, below, provides a structure to achieve balance and unity between the planning of teacher-directed and child-led learning opportunities during play.

Accretion
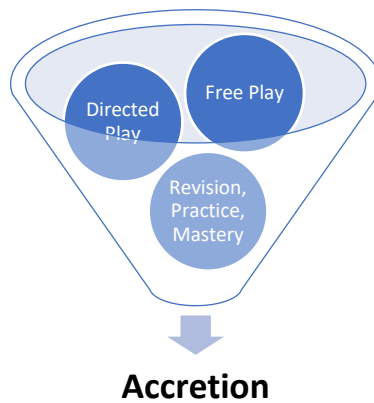
Figure 2.11 The Play Spiral (Moyles 1989, cited in Wood and Attfield 2005)

Assessment methods, introduced in Section 2.3.2, are also applied during play-based learning to inform future experiences and ensure that play is interesting and successful for the child (Dunphy 2008, cited in NCCA 2009b). During play, the teacher monitors the development of the child's dispositions, attitudes, values, skills, knowledge, and understanding during opportunities to watch, listen, talk, and empathise with the children (Dunphy 2008, cited in NCCA 2009b). Assessment of learning can then be recorded using notes, stories, samples of the children's work, and photographs (Dunphy 2008, cited in NCCA 2009b). The teacher can then adapt the learning environment in response to these assessment records to extend and build progression in the next play session (Wood and Attfield 2005; Fallon 2017).

Play-based learning can also be beneficial for children with special educational needs, as intuitive child-led playful learning is more effective for children who experience serious learning difficulties (Papatheodorou 2008). Careful planning for the child's needs can be outlined in a student support plan (Department of Education and Skills, 2007) to ensure that the intended learning outcomes remain the focus during play-based learning.

Play-based learning may be transferred to outdoor educational environments; however, it is imperative that these methodologies and strategies are considered to ensure high standards of teaching are achieved (Kernan and Devine 2010; Hansen Sandseter et al. 2012). These approaches are explored in the following section.

2.3.4.3 Play-Based Learning and Teaching Outdoors

Play-based learning and teaching outdoors is promoted in Aistear: The Early Childhood Curriculum Framework (NCCA 2009a). Outdoor play provides additional benefits to indoor play, such as exposure to the sun and the resulting intake of vitamin D, contact with naturally occurring bacteria mycobacterium vaccae, which survives in the soil, along with opportunities to forage and grow healthy foods, connection with the natural environment to create a sense of belonging, sensory input, the development of fine and gross motor skills, social learning experiences, supported risk taking and stress reduction (Wiedel-Lubinski and Madigan 2020; Cree and Robb 2021). As outdoor play is categorised using the same typologies used for indoor play, outlined in the previous section (Bilton 2003; Greenwood 2017), planning and assessment needs to be as detailed as it would be for an indoor play session. The outdoor learning space should be stimulating and rich in natural resources to provide high-quality play experiences that invite and sustain active investigation (Harding 2008; Wilson 2008; Greenwood 2017; Cree and Robb 2021). However, many school grounds lack stimulating natural environments to nourish this approach to learning and teaching (Greenwood 2017). A small school garden may provide suitable learning opportunities in ECE settings but must be expanded as children get older to provide for movement, collaborative work, and space for solitary learning experiences (Brugge 2007). Curriculum understanding, subject knowledge, and classroom management are also required to scaffold and support the quality of learning in this context (Harding 2008; Wilson 2008; Greenwood 2017; Mackinder 2017). Careful planning and observation of children's actions and interactions provides teachers with information on the effectiveness of natural resources, as recent studies note that some children may prefer indoor play using ready-made toys (Bilton 2003; Harding 2008; Bay 2020). Therefore, an integrated approach to planning for learning and teaching outdoors can enable the teacher to achieve curricular content, as outlined in Table 2.1, below (Wilson 2008, p.76; Waite et al. 2017).

Table 2.1

The Potential for Integration of Curricular Subjects in the Outdoor Educational Setting

Outdoor Play Activity	Supporting Materials	Language and Literacy	Maths	Science	Social Studies
Dramatic Play Cooking	Recipe Cards Pots and dishes Measuring cups and spoons Stirring utensils Plastic knives and spoons Natural materials (leaves, etc.) Water	'Reading' recipes. Sharing ideas Giving directions	Counting Measuring Comparing	Observing properties of materials	Appreciate different types of food and food preparation
Construction	Sticks Sand Tape Cardboard Boxes Drawing Materials Stones Reference Books	Drawing blueprints Studying books Discussion of ideas.	Measuring Comparing	Making hypothesis Considering 'what if' situations Influence of gravity, weight, size, etc.	Appreciate different jobs
Gardening	Child-sized tools Dirt Wheelbarrow Seed catalogues Seed packages Drawing materials	Study of seed catalogues and packages Sketching	Counting Positions in space Size	Weather What plants do you need to grow? Parts of a plant Source of food	Appreciate different jobs and types of food

Field Study	Sketch book Clipboard Drawing/writing materials Guidebooks Magnifying glasses Collecting bags or boxes	Studying books Recording observations Making graphs	Counting Measuring Comparing Matching Categorising Spatial awareness	Hypothesising Physical properties Plants and animals Weather Soil Scientific inquiry Draw conclusions. Observe attentively. Use observation tools	Map making Geographic awareness

Wiedel-Lubinski and Madigan (2020) place nature-based play within the concept of emergent approaches to learning and teaching outdoors. Emergent approaches to learning can complement intentional curriculum planning to develop compassion, empathy, kindness, and respect for the natural environment (Wiedel-Lubinski and Madigan 2020). Emergent nature-based play occurs when a child experiences a sense of timelessness while feeling a deep connection with the focus of play (Cornell 2017). This is achieved through collaborative playful activities, active learning, challenging tasks, and process, rather than outcome-based play (Cornell 2017). In addition to this, sensory-based experiential learning experiences, during activities such as blindfold trails and the creation of soundscapes, engage children with nature to enhance their curiosity and imagination (Cornell 2017; Wiedel-Lubinski and Madigan 2020). Choice is central in emergent approaches, and children are provided with flexibility in choosing challenging skill-based tasks (Cree and Robb 2021). Risky play, such as climbing trees, swinging on ropes, the use of tools, fire making, and navigation within safe learning environments is promoted during emergent nature-based play to encourage children to self-assess and ask for help when necessary (Cornell 2017; Wiedel-Lubinski and Madigan 2020; Cree and Robb 2021).

The vision, aims, principles, broad objectives, subject content objectives, concepts and skill development, and assessment of the Irish PSC (NCCA 1999a) provided a structure for collection of data during semi-structured observations of learning and teaching in this study, which is discussed in detail in the methodology chapter. However, teaching curricular content varies, as the educator chooses the methodologies, strategies, and material resources available. It is also affected by the context in which it is being taught, who the children are, core family beliefs, prior knowledge, and frame of mind (Bronfenbrenner 1979; NCCA 1999a; Swann 2012). Therefore, the following section will explore the pedagogical role of the teacher in the Irish PSC context.

2.3.5 The Role of the Irish Primary School Teacher

The definition of the role of the teacher has evolved considerably over time. In 1969, the teacher's primary role was viewed as someone to transmit a body of knowledge and skills (Hoyle 1969). In 1960s Ireland, a teacher was not deemed effective unless they kept behaviour in his/her class under control, regardless of the success in generating spontaneity and creativity in learning and teaching (Hoyle, 1969). However, in the 1980s, an effective teacher was described as someone who made tasks interesting (Cullingford 1989). Moreover, Cullingford (1989) defined the role of the teacher as someone who enabled children to recognise processes involved in learning. Today, teachers strive to offer children a safe place to engage in autonomous, open-ended, and trial-and-error learning. The child should be enabled to identify mismatches between his/her current expectation and experience, problematise the mismatches, and create trial solutions by subjecting them to critical scrutiny (Swann 2012). An effective teacher assists in problem formation through encouragement, reflection, synthesising, remembering, prompting, and reformulation. He/she models good listening and attention skills, maintains boundaries, forms contracts, articulates ideas in speech, shares knowledge, and provides constructive feedback (Swann 2012). Teachers also promote social and emotional skills and create conditions conducive to learning, yet it takes a good teacher to understand that s/he is not always in control of these conditions (Robinson 2015). Moreover, great teachers understand that it is not enough to simply know their disciplines, as Robinson (2015) outlines that "their job is not to teach

subjects; it is to teach students. They need to engage, inspire, and enthuse students by creating conditions in which those students will want to learn" (p. 104).

The Irish PSC argues that the quality of teaching determines the success of child learning and development at school (NCCA 1999a). It highlights that the teacher brings a wide repertoire of expertise and competence when planning and directing the learning process (NCCA 1999a). The teacher's role is one of a caring facilitator to guide, interpret, and respond to the child's learning needs (NCCA 1999a). This role is informed by a concern for the uniqueness of the child, a respect for the integrity of his/her learning, and a sense of enthusiasm and commitment to teaching. The relationship between the teacher and child is highlighted as of paramount importance in the learning process, and the teacher's concern for the child's well-being and development is the basis for the successful creation of a supportive environment that can facilitate the child's learning (NCCA 1999a). The class teacher (CT) has first-line responsibility for the education of all children in the class; therefore, teaching approaches should be adapted for children with special educational needs (DESb 2017a). Teacher agency is further enhanced in the redeveloped curriculum framework consultation process which seeks answers to questions such as "What is a curriculum?", "How does it support my professional practice?", and "What is my role as a teacher in curriculum making?" (NCCA 2020; Walsh 2022). Moreover, the concept of a curriculum as a framework allows for an understanding of learning and teaching as "an organic and dynamic process of development and co-construction between teachers as professionals and teachers and children" which is "made and remade every day in every classroom across the country" (Walsh 2022).

The following section will now explore terms "environment" and "outdoors" as they appear in the Irish PSC (NCCA 1999a) as we begin to consider how the FS approach to learning and teaching may be situated in the context of this curriculum.

2.4 Learning and Teaching Outdoors in the Context of the Irish Primary School Curriculum

Figure 2.12 The Wren's Nest in The Hollow of a Beech Tree (Murphy 2019)

The wren is a native Irish bird. It can be found throughout the nation of Ireland during all seasons (Bird Watch Ireland 2018). This bird prefers to build its nest in the hollows of a beech tree. In this metaphor, the wren's nest symbolises how elements of the Irish PSC may be situated alongside Scandinavian philosophies in this naturalised tree.

Although a rationale for this research was created in Chapter One, an exploration of the Irish PSC's vision, aims, and curricular areas propels this conversation further to explore the potential for learning and teaching outdoors through the FS approach (NCCA 1999a; Waite et al. 2017). Learning and teaching outdoors may be defined through specific viewpoints, such as nature-based, scientific and factual (cognitive), mental and physical health (vitalising), aesthetic and spiritual (sensibility), emotional (sensitivity), creative, place-based learning, and environmental education (Madden 2019). Moreover, Lee et al. (2022) outline the extensive terminology in which learning and teaching outdoors may be defined as. However, this research project focuses on broader terms of "outdoors", "natural", and the "non-human" "environment" as defined in the Irish PSC and guiding principles of the FS approach (NCCA 1999a; IFSA 2019). This will begin with an exploration of "outdoors" and "environment" as referenced in the Irish PSC (NCCA 1999a).

2.4.1 References to the Outdoors and the Environment in the Irish Primary School Curriculum

The "outdoors" and "environment" are referenced throughout subject areas of the Irish PSC, specifically in the general aims of History, Geography, Science, Visual Arts, Drama, Music, SPHE and PE curricula (NCCA 1999a), which are discussed in each of the following sections.

2.4.1.1 Social, Environmental, and Scientific Education

The introduction of Social and Environmental Studies in Curaclam na Bunscoile (1971) introduced curricular subjects of Nature Study, Elementary Science, and Geography. It also provided detailed syllabi of environmental education, to include explorations of animal and plant life. However, in 1992, a report produced by the Irish National Teachers' Organisation (INTO) highlighted teachers' tendencies to rely on textbooks to deliver the science curriculum learning outcomes and a resistance to engaging with nature outdoors (Madden 2019). Although a follow-up report (INTO 1996) presented proposals to improve on textbook-dominated methodologies in science, opportunities for children to engage with the natural world were not utilised (Madden 2019).

Nature study was incorporated into SESE in the revised 1999 curriculum under strands "Living Things" and "Environmental Awareness and Care" (Science) and "Natural Environments" and "Environmental Awareness and Care" (Geography) (NCCA 1999a). A key characteristic of learning within SESE is the involvement of the child in active exploration and investigation of the environment, to include natural and human features, especially those in the immediate locality. The child is facilitated to investigate processes that create, sustain, or change physical features in Geography. S/he also learns about the interactions of people with each other and their environments in the locality and wider contexts. The science curriculum aims to improve the child's knowledge and understanding of themselves and the world in which they live. This curriculum focuses on the engagement of the child in the active construction of their own understanding. Moreover, the scientific approach to investigation fosters the development of important skills, concepts, and knowledge through which children can observe, question, investigate, understand, and think logically about living things and the environment. History reflects on the

development of understanding of the actions, beliefs, and motivations of people in the past, and the curriculum states that this subject is fundamental to an informed appreciation of contemporary society and environments. However, Madden (2019) argues that this objective, scientific approach to living things advocated in the Irish PSC (NCCA 1999a) creates a functional approach to learning about the environment and thus abandons the emotional and humane understanding of nature, which was central to social and environmental studies in Curaclam na Bunscoile (1971).

While knowledge of plants and animals is specifically outlined in SESE, there is scope to integrate learning and teaching outdoors in a variety of curricular subjects, such as The Arts, SPHE and PE. The following sections outline how an exploration of the child's environment is promoted in these subjects within the curriculum (NCCA 1999c; 1999d; 1999e; 1999f; 1999g; 1999h; 1999i; 1999j; 1999l; 1999m; 1999n; 1999o; 1999p; 1999q; 1999r; 1999s).

2.4.1.2 The Arts

A range of activities are presented in visual arts for the child to perceive, explore, respond to, and appreciate the visual world, which "involves looking with awareness and understanding of the visual elements and their interplay in the environment and in art works" (NCCA 1999f, p. 2; 1999o). In pursuit of the learning outcomes of Music, the child is encouraged to listen with attention to the sounds in the environment and gradually become aware of how sound is organised (NCCA 1999g; 1999p). Motivation and relationships between people that exist in a real, imagined, or historical context are explored in Drama to help the child understand the world in which they live (NCCA 1999h; 1999q). In addition to these points, one of the general aims of The Arts is "to develop the child's awareness of, sensitivity to and enjoyment of visual, aural, tactile and spatial qualities in the environment" (NCCA 1999f, p.4).

2.4.1.3 Social, Personal, and Health Education

The SPHE curriculum outlines the importance of the child's understanding of the world in which he/she lives, in addition to his/her own role and ways of behaving which are significantly influenced by the family and home environment (NCCA 1999i; 1999r). This curriculum highlights that SPHE is most effective when shared with teachers and relevant members of the child's community, allowing the child to make

connections between life at home, in school, and in the community. The strand of "Myself and the Wider World" enables the child to develop a sense of social responsibility and an appreciation of the interdependent nature of the world in which they live (NCCA 1999i). The child is encouraged to develop an awareness of the need to care for the environment and to keep it in trust for future generations.

2.4.1.4 Physical Education

The broad objectives of PE outline the importance of social and personal development, physical and motor development, knowledge and understanding, creative and aesthetic development, and the development of health-related fitness (NCCA 1999j). "Outdoor and Adventure Activities" include walking, cycling, camping and water-based activities, orienteering, and outdoor challenge activities (NCCA 1999j; 1999s). However, it is recommended that the introduction of orienteering occurs through preliminary exercises on the school site. This curriculum also highlights that non-competitive water-based activities may offer alternative avenues for pupil achievement and encouragement to adopt a healthy lifestyle based on the enjoyment and appreciation of the outdoors.

To summarise this section, while nature-based content is present in SESE, terms "outdoors" and "environment" feature throughout The Arts, SPHE, and PE curricular objectives, and potential opportunities are provided for an integrated approach to learning and teaching outdoors. Nevertheless, studies such as Quinn (1990; cited in Madden 2019) and Varley et al. (2008; cited in Madden 2019) highlight that Irish primary school teachers are not availing of opportunities to teach outdoors, which Madden (2019) attributes to a lack of nature-based content knowledge and a shortage of bio-diverse school grounds. However, emergent teaching approaches, such as FS, may complement intentional curriculum planning and provide guidance for holistic and integrated learning experiences (Wiedel-Lubinski and Madigan 2020). Thus, the following section introduces key features and principles guiding this approach before considering a rationale for its inclusion in the Irish PSC.

2.5 The History of the Forest School Approach

The FS concept was founded by a team of academics at Bridgwater and Taunton College, Somerset, UK after an exchange visit to Denmark in 1993 (Cree and

McCree 2013). During this trip, the founders were inspired by the "Friluftsliv" open-air culture that permeates early years education there. "Friluftsliv" is a Norwegian tradition for seeking the joy of identification with free nature and challenges patterns of thought, values, and lifestyle imposed by modernity (Faarlund 2007). The team established a FS approach to learning and teaching in the university campus crèche as a result. In 1995, the college provided continuing professional development (CPD) for educators interested in the FS approach. By 2000, local colleges in Wales and local authorities in England started to deliver FS-inspired programmes, and in 2003 the Welsh Forestry Commission established the Open College Network (OCN) qualification for FS practitioners (Forest School Association (FSA) 2018a). This FS Leadership qualification is a United Kingdom (UK) level three course, equivalent to a level five accreditation on the National Framework of Qualifications of Ireland (Quality and Qualifications Ireland (QQI) 2009). Although FS adheres to key features and guiding principles, there is no formal curriculum. Instead, FSLs are taught to combine key principles of FS with environmental and nature education, child development, wild, free, and therapeutic play during FS leadership CPD (Forest School Ireland 2021). A portfolio of learning consisting of risk assessments, lesson plans, reflective logs, and research concerned with practical considerations for the delivery of FS sessions, learning and development in FS, planning and preparation, practical skills, and consideration of the woodland environment, as outlined in Table 2.2 below, is required to attain FS leadership certification (Circle of Life Rediscovery 2019; Forest School Ireland 2021). At this level of qualification, the practitioner is expected to hold factual, procedural, and theoretical understandings that underpin the FS approach (Circle of Life Rediscovery 2019).

Table 2.2

Forest School Leadership Continuing Professional Development Course Outline

Unit Title	Unit Aim	Learning Outcomes	Credits Awarded
Delivery	Learners will gain knowledge and skills to facilitate and evaluate	Facilitate six pilot Forest School sessions according to	Three

	a Forest School programme	the Forest School ethos and principles. To assess the impact of the Forest School pilot session on the learning and development of the participants. To evaluate the six pilot Forest School sessions in order to inform future learning	
Learning and Development	Students will gain knowledge and be able to communicate with each other. understanding of forest school pedagogy and approach to learning and development	Demonstrate an understanding of the key principles of Forest School Understand the value of play during Forest School Understand relevant theories of learning and development and their application to Forest School. Understand the impact of behaviour on learning and development at Forest School	Six
Planning and Preparation	Learners will gain knowledge and skills to plan a Forest School programme with an understanding of the ecological impact of Forest School	Understand the historical development of Forest School Be able to manage the ecological impact of Forest School through the creation of a three-year biodiversity plan	Three
Practical Skills	Learners will gain practical skills and be able to teach Forest School participants	Apply a range of skills, such as the safe use and maintenance of tools and ropes, tying knots, shelter building, and campfire management relevant to a Forest School programme.	Three

The Woodland Environment	Learners will gain knowledge of the benefits of woodlands, their structures, and management	To understand the structure of woodlands Identify a range of flora and fauna and understand the importance of identification. To understand the management of forests as a sustainable learning environment. To understand the importance of the relationship between Forest School and the woodland environment.	Three

In 2002, the inaugural Forest School National Conference defined FS as "an inspirational process that offers children, young people, and adults regular opportunities to achieve, develop confidence and self-esteem through hands-on learning experiences in a local woodland environment" (FSA 2018a). The key features of FS, as listed in Figure 2.13 below, were outlined.

1.

It is run by qualified practitioners

2.

It is a long-term process with regular contact in a local wooded environment (preferably over the seasons)

3.

It follows a child-centred pedagogy where children learn about and manage risk
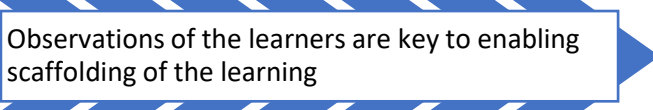
4.

It has a high adult: child ratio

5.

Observations of the learners are key to enabling scaffolding of the learning

6.

Care for the natural world is integrated

Figure 2.13 Key Features of Forest School

The FSA (UK) was established in 2011 and the definition, principles, and criteria were reviewed to "Forest School is an inspirational process that offers ALL learners regular opportunities to achieve and develop confidence and self-esteem through hands-on learning experiences in a woodland or natural environment with trees" (FSA 2018a). Six guiding principles of FS were also defined, which are outlined in Table 2.3, below (FSA 2018b).

Table 2.3

Six Guiding Principles of Forest School

1.	Forest School is a long-term process of frequent and regular sessions in a woodland or natural environment, rather than a one-time visit. Planning, adaption, observations, and review are integral elements of Forest School.
2.	Forest School takes place in a woodland or natural wooded environment to support the development of a relationship between the learner and the natural world.
3.	Forest School aims to promote the holistic development of all those involved, fostering resilient, confident, independent, and creative learners.
4.	Forest School offers learners the opportunity to take supported risks appropriate to the environment and to themselves.

| 5. | Forest School is run by qualified Forest School practitioners who continuously maintain and develop their professional practice. |
| 6. | Forest School uses a range of learner-centred processes to create a community for development and learning. |

While FS has been noted to be a specialised learning approach that sits within and complements the wider context of outdoor and forest education (FSA 2018a), participants are also placed at the centre of their learning experience and have an entitlement to the experience, reflecting inclusion of the voice of every child and access to education, as defined in the United Nations Convention on the Rights of the Child, introduced in Section 2.3, specifically articles two, three, five, twelve, thirteen, seventeen, twenty-three and twenty-nine (UN 2010; FSA 2018c). These articles state that every child is entitled to inclusive, non-discriminatory access to education which harnesses his/her best interests while facilitating freedom of expression, as summarised in Table 2.4 below. Furthermore, Article 29 1 (e) specifically states that "the development of respect for the natural environment" is a key objective of education (UN 2010).

Table 2.4

The View of Forest School Participants

	Forest School Participants are Viewed as:	Reflected in The Rights of the Child (UN 2010)
1.	Equal, unique, and valuable	Article 2: Non-discrimination of the child
2.	Competent to explore and discover	Article 5: Parental guidance and child's evolving capacities Article 13: Freedom of expression Article 23: Children with a disability

3.	Entitled to experience appropriate risk and challenge	Article 29: Aims of education
4.	Entitled to choose, and to initiate and drive their own learning and development	Article 12: The child's opinion Article 29: Aims of education
5.	Entitled to experience regular success	Article 3: Best interests of the child Article 29: Aims of education
6.	Entitled to develop positive relationships with themselves and other people	Article 2: Non-discrimination of the child Article 13: Freedom of expression Article 29: Aims of education
7.	Entitled to develop a strong, positive relationship with their natural world	Article 17: Access to appropriate information Article 29: Aims of education

The Irish Forest School Association (IFSA) was founded in 2016 and its mission is to support the development of quality FS in a diverse range of settings in Ireland (IFSA 2019). Although the principles and guidance remain grounded in the UK's FSA model, additional conditions have been added. These include a teaching duty that is "closely related to the learner's developmental stage and regular curricular requirements" and recognition that "the success of Forest School is to a large degree dependent upon the skills of the Forest School Leaders who can identify and capitalise on the varied opportunities for learning that emerge from the children's interaction with the setting" (IFSA 2019).

This section provided the reader with a detailed overview of the history and key principles that guide the FS approach to learning and teaching. The following section considers the child's learning during FS, specifically, within the context of the Irish PSC, to create a rationale for this study.

2.6 A Rationale for the Incorporation of the Forest School Approach in the Irish Primary School Curriculum
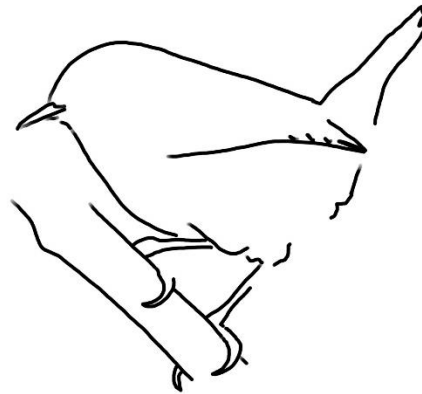
Figure 2.14 The Wren (Murphy 2019)

The wren (Irish translation: dreolín), a small but common resident throughout Ireland, represents the Irish FS approach to learning and teaching. Due to its small size, the wren is often heard but not seen (Bird Watch Ireland 2018), symbolising the grassroot movement of FS approaches occurring in education settings throughout Ireland. This section seeks to uncover how FS may reside within the "nest" of learning and teaching in the Irish PSC, explored previously.

As FS is a broad concept, it can be integrated in many curricular subject areas, such as English, Maths, and Science (O'Brien 2009; Lamb 2011; Mackinder 2017; Coates and Pimlott-Wilson 2019). However, replications of outdoor learning that occur in the mainstream classroom cannot be compared to FS (Harris 2017; McCree 2019). Reported benefits of learning through the FS approach include the progression of social and communication skills (Swarbrick et al. 2004; Ridgers et al. 2012; Waite et al. 2015; Harris 2017), gross and fine motor skill development (O'Brien 2009; Ridgers et al. 2012; Waite et al. 2015; Turtle et al. 2015) and the improvement in physical development and stamina (Ridgers et al. 2012; Turtle et al. 2015) through measured risk taking (Maynard 2007; Elliott 2015; Harris 2017). In addition to the above advantages, the outdoors is rich in sensory materials. This provides stimulation for children to explore natural habitats, which can be motivating and lead to an increased level of concentration (Swarbrick et al. 2004; O'Brien 2009; Waite et al. 2015; James 2018). Furthermore, there is also the potential to promote

environmental and sustainability education that strengthens the child's sense of belonging during nature-based learning elements of this approach (Cumming and Nash 2015; Turtle et al. 2015; Harris 2017; Cree and Robb 2021). However, FS is currently under theorised in the literature on outdoor education (Leather 2013; Harris 2017; Knight 2018), and it is necessary to situate claims regarding FS in well-designed and well-conducted research (Leather 2013; 2018). Moreover, some studies state that FS enhances self-confidence in individuals, but this is unsubstantiated (O'Brien and Murray 2009). Observations of an active and busy child cannot be directly correlated with increased self-esteem (Leather 2018). Therefore, large-scale systematic approaches are required to measure children's achievement and development during FS (Slade et al. 2013; Harris 2017). There are relatively few empirical studies that investigate the FS approach to learning and teaching, further consolidating the need for ongoing research in this area. Currently, only two empirical FS studies are based in Ireland, and one of these was conducted by this researcher (Murphy 2018; Egan 2020).

As every educational system functions within its social context, cultural differences must be navigated when implementing a Scandinavian style of learning and teaching in new climates and practices (Knight 2013; 2018; Leather 2013; 2018; Davenport 2019). However, the Danish "Udeskole", which underpins FS, provides a less standardised approach to education than many of its European counterparts (Waite et al. 2015; Waite and Goodenough 2018) and the broad guiding principles of the FS approach provide challenges for primary school teachers to understand what each session should entail in the context of an outcome-based curriculum (Maynard 2007; Knight 2013; Waite et al. 2015; Harris 2017). Cumming and Nash (2015) advise practitioners to adapt this approach to suit the specific learning environment, such as coastal environment in their study, however, the IFSA outlines the requirement of a wooded environment as a key principle (IFSA 2019; Kemp 2019). Knight (2018) argues that the processes involved in adopting this Scandinavian approach in the UK's national curriculum have made long-term normalisation of FS attractive to a variety of countries and cultures, however, corporate commodification has resulted in the overtaking of theoretical and conceptual understandings by pragmatic concerns

(Slade et al. 2013; Leather 2013; 2018; Lloyd et al. 2018; Sackville-Ford 2019a). These pragmatic concerns include financial, clothing, and behavioural issues (Maynard 2007; Slade et al. 2013; Elliot 2015; Waite et al. 2015), which may result in FS becoming a standardised, controllable, and efficiently delivered activity (Leather 2018). Therefore, the FSA (UK) has moved toward a quality assurance system, which requires evidence of CPD from practitioners (Knight 2018).

The case study methodology is the most common research approach in empirical FS studies (Maynard 2007; O'Brien 2009; Roe and Aspinall 2011; Ridgers et al. 2012; Slade et al. 2013; Waite et al. 2015; Cumming and Nash 2015; Elliott 2015; Harris 2017; Mackinder 2017; Murphy 2018; Egan 2020), and while this approach captures the lived experiences of the participants, the findings cannot be generalised (Cohen et al. 2013). Data-collection methods vary between qualitative (Maynard 2007; O'Brien 2009; Ridgers et al. 2012; Slade et al. 2013; Cumming and Nash 2015; Waite et al. 2015; Harris 2017; Mackinder 2017; Murphy 2018; Egan 2020), and quantitative (Swarbrick 2004; Roe and Aspinall 2011; Elliott 2015), however, some empirical FS studies depict adults' perspectives of learning and teaching and, therefore, omit opportunities to capture children's voices (Swarbrick et al. 2004; Maynard 2007; O'Brien 2009; Ridgers et al. 2012; Elliott 2015; Waite et al. 2015; Harris 2017). Studies that include children's voices, achieved through semi-structured interviews and questionnaires (Roe and Aspinall 2011; Ridgers et al. 2012; Cumming and Nash 2015; Turtle et al. 2015; Murphy 2018; Egan 2020), report positive feelings towards learning outdoors mixed with levels of anxiety about the forest setting at times. Qualitative studies consist of small sample sizes and data collected over short periods of time (Swarbrick et al. 2004; Maynard 2007; Roe and Aspinall 2011; Ridgers et al. 2012; Cumming and Nash 2015; Elliott 2015; Turtle et al. 2015; Mackinder 2017). At times, samples include schools committed to the FS approach (O'Brien 2009; Riders et al. 2012), which differs from the case of an individual teacher who may wish to introduce FS methodologies in his/her teaching approaches. Some of these case studies were funded by bodies such as the Forestry Commission and The Mersey Forest (O'Brien 2009; Riders et al. 2012), whose ethos and values promote learning and teaching outdoors and occur alongside policies that

support outdoor learning such as Learning Outside the Classroom Manifesto 2006[9]. In addition to this, certain studies occur in idyllic settings, specifically zoned, or used by The Forestry Commission[10] and/or The Wildlife Trusts[11] (O'Brien 2009; Riders et al. 2012; Elliot 2015), which can differ from the general standard of nature-based settings in primary schools.

As the FS Leadership CPD was originally established as a level three course (UK) to coincide with the standard of education required for pre-school educators (Knight 2018), it enables practitioners from a variety of backgrounds and educational experiences to embark on FS CPD and bring their varied life experience to the approach. However, it has become a barrier for some higher education authorities to introduce it formally as a module due to the lack of a theoretical framework (Knight 2018; Leather 2018). Moreover, empirical studies are often based in early primary and ECE settings (Maynard 2007; O'Brien 2009; Ridgers et al. 2012; Mackinder 2017; Murphy 2018), which is not representative of curricular content required at senior primary level. Therefore, additional research in the area of FS is required to establish how this approach can improve learning and teaching and the delivery of learning outcomes at primary and post-primary levels. In addition to this, FSLs identify the focus of learning in FS as social, rather than academic development (Harris 2017). Skills such as teamwork, the development of relationships with others, self-knowledge, and risk taking are commonly listed as benefits of FS (Murray and O'Brien 2005; Maynard 2007; O'Brien 2009; Harris, 2017). Although these learning outcomes improve the development of self-esteem and self-confidence (Murray and O'Brien 2005; Waite et al. 2015), additional opportunities such as academic achievement in curricular subject areas and the development of language and communication skills should not be overlooked (Murray and O'Brien 2005; O'Brien 2009; Slade et al. 2013; Waite et al. 2015; Harris 2017). However, tensions may exist between the

---

[9] Launched by the United Kingdom's Secretary of State in November 2006 to recognise and promote the benefits of learning outside of the classroom.

[10] The Forestry Commission is a non-ministerial government department responsible for the management of publicly owned forests and the regulation of both public and private forestry in England.

[11] The Wildlife Trusts is a grassroots movement of people on a mission to restore a third of the UK's land and seas for nature by 2030. Each Wildlife Trust is an independent charity.

maintenance of the principles of FS (freedom, independence, and child-led learning) and the need to influence the child's academic ability (Maynard 2007; Slade et al. 2013; Harris 2017). McCree (2019, p.17) reflects on some of these potential professional conflicts, such as understanding the FS values and ethos, CT interest, setting standards in practice, meeting curricular objectives, and site provision and care below in Table 2.5.

Table 2.5

From Conflict to Congruence in Professional Relationships at Forest School

Key Factor	Conflict	Collaboration	Congruence
Understanding of FS values and ethos	Tokenism, marketisation, branding, co-opted for other aims, misconception	Staff meetings, wider communication, participation, partnership	Whole-team approach, integrated, support, joint observation, related outdoor experience, training
Follow-up and interest from the staff team	Reluctance, link to ignorance of FS and tokenism, challenge in sociocultural attitudes to being outdoors, devaluing outdoors, no observational scaffolding, new perspectives not observed/fed back, rejection of play value, little parental support, lack of ideal staff training, linked reform challenges in early years training and practice, assertiveness	Good support from management, parental communication, culture change within settings through training, and active change agency	Whole-team approach, links with home education ethos, parents, teachers and other staff present, active change agency

	challenge for practitioner		
Controls and standards in setting practices	Power relations, lack of practitioner autonomy, previous low standards, lack of monitoring, rejection of play value, lack of parental involvement, lack of required continuing professional development, difference in role expectation	Culture change, change agency, pro-socialising effect of raising standards, involvement of team and community, partnership working	Integrated ethos/values/standards, support from superiors, autonomy
Curriculum pressure and setting aims	Government-set agenda, economic targets, valuing of academic achievement, stand-alone supplementary practice, enclosure, disciplinary gaze	Expanding on learning approaches, balanced value of academic, experiential, and practical	Integrated within curriculum, early years and foundation studies parallels, child-led learning, value of play, reconstructed subjectivities, free play settings
Site provision and care	Politics, ownership, power struggle, responsibility, safety concerns, lack of affordances, children, or participation	Involving children, relationships with landowners, and woodlands	Own site, autonomy, purpose-designed, resources for maintenance, part of curriculum

Strategies to transition from conflict to congruence in this table are situated around stronger communication skills and CPD to create a whole team approach that includes management, school staff, and parent(s)/guardian(s), as advised in departmental guidelines to inclusive educational practice (DESb 2017a).

Although this section provided the reader with a rationale for the FS approach to learning and teaching, gaps that remain in the literature, such as the need for systematic empirical research studies at senior primary and post-primary levels which gather academic attainment, and the need for additional research in the Irish cultural context were also acknowledged. The following sections will explore educational theory and pedagogical approaches underpinning the Irish PSC and FS approach to develop this discussion further, prior to a detailed exploration of the research approach adapted in the subsequent methodology chapter.

2.7 Educational Theory Underpinning the Irish Primary School Curriculum

Figure 2.15 Beech Nuts (Murphy 2019)

The beech nuts are the fruit of the beech tree. This metaphor represents educational outputs of the FS approach to learning and teaching within the Irish PSC context. Therefore, a critical exploration of the educational theory and pedagogical processes that underlie the Irish PSC and FS seek to uncover the "fruits" of learning and teaching that can be achieved in this approach.

The underpinning philosophy, ideological position, educational theory (or the theoretical framework) and research are not clearly articulated in the Irish PSC (NCCA 1999a; O'Rourke 2018). Therefore, this section will begin with an exploration of educational theory that is apparent in the vision, aims, principles, broad objectives, subject content objectives, concepts, skills, and assessment of the Irish PSC. Although there is no one-size-fits-all approach to education, effective learning and teaching theories include behaviourism, cognitivism, constructivism, and social constructivism (Cohen et al. 2004; Delaney 2017). Characteristics of these learning theories are outlined in Table 2.6 below (Cohen et al. 2004, p. 170).

Table 2.6

Characteristics of Educational Learning Theories

	Behaviourist	Cognitivist	Constructivist	Social Constructivist
Learning	Stimulus and response	Transmitting and processing of knowledge and strategies	Personal discovery and experimentations	Mediation of different perspectives through language
Type of learning	Memorising and responding	Memorising and application of rules	Problem-solving in realistic and investigative situations	Collaborative learning and problem-solving
Instructional strategies	Present material for practice and feedback	Plan for cognitive learning strategies	Provide for an active and self-regulated learner	Provide scaffolds in the learning process
Key concepts	Reinforcement	Reproduction and elaboration	Personal discovery generally from first principles	Discovering different perspectives and shared meanings

Progression from instruction and representation to knowledge generation is evident in the move from behaviourist, stimulus-response theories through cognitivism (information processing and transmission) to constructivism (Cohen et al. 2004). This advancement to constructivism and social constructivism ensures that learning and teaching involve "problem-solving, communication, and the ability to evaluate and apply information, far beyond the recitation paradigm of traditional learning and an emphasis on correct responses" (Cohen et al. 2004, p. 169). Each of these learning theories are described in greater detail in the following sections.

2.7.1 Behaviourism

Behaviourism, as theorised by Skinner (1974), occurs when the learner's behaviour is motivated and modified through stimuli and consequences (Schunk 2012; Swann 2012; Bonfield and Horgan 2016). Learning and teaching occur through a sequence of skills as outlined in Figure 2.16.
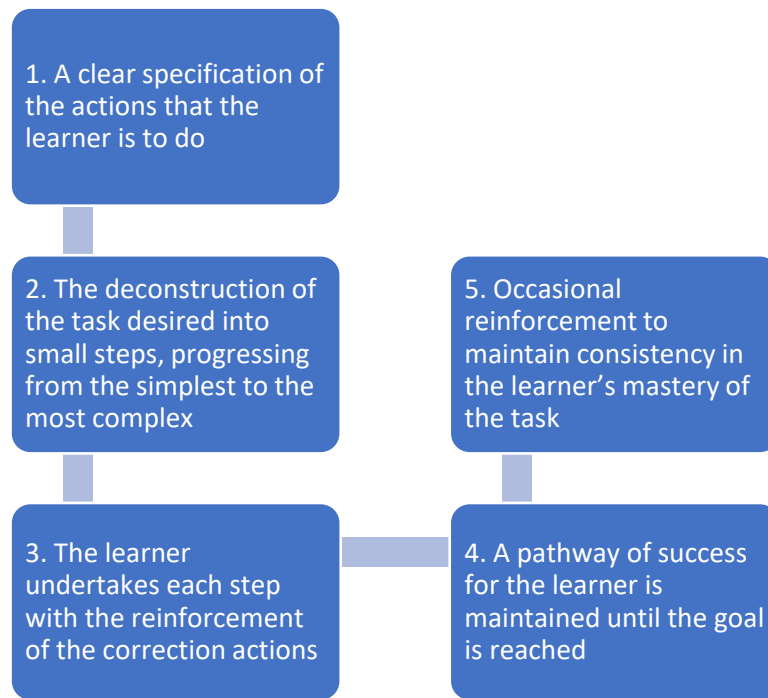
Figure 2.16 Behaviourism Learning Theory (adapted from Hilgard and Bower 1975; cited in Bonfield and Horgan 2016, p. 69)

Ownership of rules and consequences is advocated in this theory to enable the child to self-regulate and direct his/her thoughts, feelings, and actions toward the attainment of learning goals (Schunk 2012).

2.7.2 Cognitivism

Activities such as attention, rehearsal, use of learning strategies, and comprehension monitoring are key elements in cognitivist learning theory (Schunk 2012; Bonfield and Horgan 2016). Choice is also important for self-regulation to occur in this process (Schunk 2012). Bruner (1960), a social cognitive theorist, argues that this model goes beyond memorising concepts as the child's capacity to create their own procedures and processes is developed (Bonfield and Horgan 2016).

2.7.3 Constructivism

Learning is an active process constructed upon the child's previous knowledge and experience in constructivism theory (Cohen et al. 2004). Theorists Piaget (1936; 1945; 1973) and Vygotsky (1926; 1929) are major influencers of this learning theory. Piaget (1936; 1945; Piaget and Inhelder 1973) argues that the child's cognitive development passes through a fixed sequence; thus, the teacher must keep the learner active and provide social interaction (Schunk 2012). Whereas Vygotsky

(1926; 1929), places emphasis on the social environment as a facilitator of development and learning (Schunk 2012) and states that self-regulation is developed through internalisations of actions and mental operations that occur in social situations. He argues that human development occurs through cultural transmission, and language is critical in this process. As a result, learning and teaching in a constructivist setting should include rich educational experiences where teachers interact with learners by seeking their questions and points of view (Schunk 2012). Instructional applications of constructivism are discovery learning, inquiry teaching (which includes greater teacher direction than discovery), peer-assisted collaboration, discussions, debates, and reflective practice where knowledge is scaffolded, and teachers assist and facilitate learners (Schunk 2012; Bonfield and Horgan 2016).

2.7.3.1 Social Constructivism

Social constructivism is concerned with the social basis of learning, particularly higher-order cognition. Based on Vygotsky's (1926; 1929) theories, it contrasts with the idea that learning is a passive process that involves the mere transmission of information from the teacher to the child (Swann 2012). Instead, social constructivism stresses the idea that learning occurs in a social environment by observing others to acquire knowledge, rules, skills, strategies, beliefs, and attitudes (Schunk 2012). Constructivism features aspects of high-order thinking, brain-based learning, deep and superficial learning, metacognition, learning styles, motivation, and cooperative learning (Cohen et al. 2004). However, effective learning, which includes these constructivist aspects, occurs through social and cooperative strategies (Cohen et al. 2004). Furthermore, the learner must be intrinsically motivated and teaching must draw on the child's emotions as well as the purely cognitive aspects of thinking (Cohen et al. 2004). There are challenges to this, however, as children who tend to achieve well academically can prefer to work in solitude if they hold the ability to succeed alone and may work on the extrinsic motivation of competition (Richard et al. 2004).

In summary, effective pedagogy, which is considered as the frame around lesson content, requires a broad range of strategies and approaches, to include

didactic and negotiated instruction, based on sustained reflection, research, and experimentation (Cohen et al. 2004; Bonfield and Horgan 2016; Delaney 2017). The PSC implies that it is a child-centred curriculum (Irwin 2018). However, Barrow and Woods (2006) argue that if the child is central, curricular content should be designed by the child; therefore, the PSC provides mixed messages (Irwin 2018). It should be noted that the child may not be the best judge of his/her needs (Wilson 1977; Barrow and Woods 2006), thus, it is a challenge to agree what the child's needs are, how we can assess this, and what education consists of according to a child's needs.

The following section will now explore the educational theory and pedagogical practice that guide the FS approach.

2.8 Educational Theory and Pedagogical Processes Guiding the Forest School Approach to Learning

The FSA attributes theories of philosophers, naturalists, and educators, namely Wordsworth, Ruskin, Baden-Powell, Leslie Paul, Kurt Hahn, Susan Isaacs, and the Macmillan sisters, as foundational underpinnings to this approach (FSA 2018a). Although the literature behind FS is sparse, Cree and McCree (2013) note the tendencies of Romantics, such as Wordsworth and Ruskin, to turn towards nature, creative freedom, imagination, childhood innocence and individual experience, and highlight that the concept of learning outdoors is not new or unique to the UK's cultural heritage. Indeed, elements of educational theories from Dewey (1902; 1916; 1933; 1934; 1938a; 1938b), Steiner (Waldorf) (1916), Rousseau (1762), Froebel (1826), Montessori (1949), Malaguzzi (Reggio Emilia) (cited in Cagliari et al. 2006; Vecchi 2010), Vygotsky (1926; 1929), Piaget (1936; 1945; Piaget and Inhelder 1973) and Pestalozzi (cited in Bennett 2006) are also evident, as outlined in Table 2.7, below.

Table 2.7

Educational Theories Underpinning the Forest School Approach to Learning and Teaching

Theorist	Element of Educational Theories that Underpin the Forest School Approach
Dewey (1902; 1916; 1933; 1934; 1938a; 1938b)	✓ Children learn by doing. ✓ Education should be based on a real-life situation. ✓ Experimentation and independent thinking must be encouraged. ✓ Provide opportunities to develop the child's own interests and work in ways that match the child's experience and contribute to their understanding of the world.
Steiner (Waldorf) (1916)	✓ Development of skills occurs in a holistic and integrated manner. ✓ Schools and teachers have the autonomy to create curriculum content.
Rousseau (1762)	✓ Importance of the development of the child's character and moral sense ✓ Children learn by experiencing the natural consequences of their actions. ✓ Importance of skill development ✓ Benefits of the natural environment
Froebel (1826)	✓ Importance of play in child development ✓ Sensory and first-hand experience in nature ✓ The three forms; interconnectedness of life, beauty, and knowledge ✓ Beginning learning from where the learner is situated
Montessori (1949)	✓ The child can only be free when the adult becomes an acute observer.

	✓ Learning occurs through movement, and the hand is linked to intelligence.
	✓ Children learn through their senses.
	✓ Children respond and enjoy learning in an environment designed to meet their needs.
	✓ The child can learn abstract principles at an early age, but only when they are introduced when the child is interested
Malaguzzi (Reggio Emilia) (cited in Cagliari et al. 2006; Vecchi 2010)	✓ Child-centred approach to learning ✓ Importance of the child's voice ✓ Importance of respect, responsibility, and community ✓ Constructivist approach ✓ Emergent and experiential learning ✓ The role of the environment as a third teacher
Vygotsky (1926; 1929)	✓ The Importance of the Social Context ✓ The importance of language and thinking. ✓ The Zone of Proximal Development; the need to scaffold learning. ✓ The importance of play and imagination
Piaget (1936; 1945; Piaget and Inhelder 1973)	✓ Teaching needs to meet the needs of the individual and their stage of development (preoperational/ concrete operational)
Pestalozzi (cited in Bennett 2006)	✓ Child-centred educational method based on individual differences. ✓ Sense perception ✓ Student's self-activity

However, the theoretical underpinnings that shape the FS approach, namely the six guiding principles of FS and the "Friluftsliv" concept, make it unique to standard outdoor education (Waite et al. 2015). The primary objective of the FS approach

appears to be the development of children's self-esteem, self-confidence, and independence skills (Maynard 2007; O'Brien 2009), and a secondary aim is to encourage children to appreciate, care for and respect the natural environment (Maynard 2007). Children learn *with* nature, rather than simply *in* nature, which Warden (2018) argues occurs through "nature pedagogy", defined as "the practice of teaching alongside nature and the learner" (Cree and Robb 2021, p. 42). Nature pedagogy values the importance of nature during learning and teaching practices to increase kinship and ecological understanding of the natural world (Cree and Robb 2021). Warden (2018) argues that a pedagogical shift occurs when learning occurs with nature, in which teachers become "nature pedagogues" (Warden, cited in Beigi 2021, p. 188). This reflects Bonnett's (2007) philosophy that we develop personally, morally, mystically, and aesthetically through the familiarisation of our senses with nature (Madden 2019). The focus of the FS approach to learning and teaching is to develop the whole child through meaningful experiences, therefore, developing the child's independence and self-esteem as s/he engages with the natural environment (Murray and O'Brien 2005). Taking risks is also an important element of this approach (Murray and O'Brien 2005; Maynard 2007; O'Brien 2009; Cree and Robb 2021), and learners develop skills such as shelter building, cooking on campfires, and identifying plants and wildlife (Harris 2017).

Previous research outlines that FS also follows constructivist and social constructivist approaches to learning and teaching, as children construct meaning through social interactions with each other and the natural environment (O'Brien 2009; Leather 2012; Harris 2017; McCree 2019; Cree and Robb 2021), as illustrated in Figure 2.17.
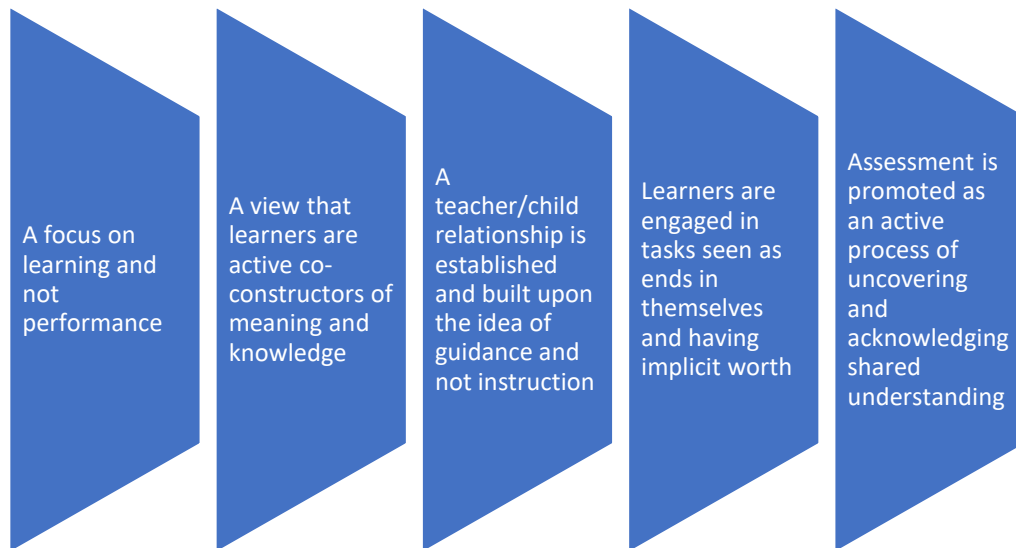
Figure 2.17 Forest School as a Constructivist and Social Constructivist Approach to Learning and Teaching (O' Brien 2009, p. 47)

Skill-based activities such as shelter building, fire making, cooking over a campfire, tree climbing, and rope use provide children with real-life examples to engage in critical and creative thinking, historical and cultural understanding, and communication and literacy (Waite et al. 2015; Mackinder 2017). Teaching during FS begins with an initial structure that includes an agreement of suitable areas to play in and acceptable behaviours around the campfire and during tool use, which then extends to a freer child-led choice of activity (Murray and O'Brien 2005; Waite et al. 2015). However, conflicts of opinion arise regarding the unstructured, play-based, and child-led nature of FS (Cree and Robb 2021) in which the general aim is to support children's freedom to explore without excessive adult intervention (Waite et al. 2015).

Similarities in educational theory and pedagogical processes underpinning the Irish PSC and the FS approach, namely, a social constructive approach to learning and teaching, were explored in this section. The following paragraphs compare key principles of the Irish PSC with the guiding principles of the FS approach to outline further connections regarding learning and teaching.

2.9 Connecting the Key Principles of the Irish Primary School Curriculum with the Guiding Principles of the Forest School Approach

Comparisons between the key principles of the Irish PSC and the guiding principles of the FS approach, as discussed previously, are summarised in Table 2.8 in order to consider how these two approaches may work in harmony to achieve a child-centred developmental approach to learning and teaching (NCCA 1999a; FSA 2018b).

Table 2.8

Connecting the Key Principles of the Irish Primary School Curriculum to the Guiding Principles of the Forest School Approach

Key Principles of the Irish Primary School Curriculum	Guiding Principles of the Forest School Approach
Learning is developmental in nature. **Assessment is an integral part of teaching and learning.** **Collaborative learning should feature in the learning process**	Forest School is a long-term process of frequent and regular sessions in a woodland or natural environment, rather than a one-time visit. Planning, adaptation, observations, and reviewing are integral elements of Forest School. • *Forest School takes place regularly, ideally at least every other week, with the same group of learners, over an extended period of time, if practicable, encompassing the seasons.* • *A forest school program has a structure based on observations and collaborative work between learners and practitioners. This structure should clearly demonstrate the progression of learning.* • *The initial sessions of any programme establish physical and behavioural boundaries, as well as making initial observations on which to base future programme development.*
The immediate environment of the child provides the context for learning.	Forest School takes place in a woodland or natural wooded environment to support the development of a relationship between the learner and the natural world.

	• Although woodland is the ideal environment for Forest School, many other sites, some with only a few trees, can support good Forest School practice. *• The woodland is ideally suited to match the needs of the programme and the learners, providing them with the space and environment in which to explore and discover.* *• A forest school programme constantly monitors its ecological impact and works within a sustainable site management plan agreed between the landowner/ manager, the forest school practitioner, and the learners.* *• Forest School aims to foster a relationship with nature through regular personal experiences in order to develop long-term, environmentally sustainable attitudes and practices in staff, learners, and the wider community.* *• Forest School uses natural resources to inspire, enable ideas, and encourage intrinsic motivation.*
Learning is most effective when it is integrated. **The child should perceive the aesthetic dimension in learning.** **Social and emotional dimensions are important factors in learning.** **Language is central to the learning process.**	Forest School aims to promote the holistic development of all involved, fostering resilient, confident, independent, and creative learners. *• Where appropriate, the Forest School leader will aim to link experiences at Forest School to home, work, and /or school education.* *• Forest School programmes aim to develop, where appropriate, the physical, social, cognitive, linguistic, emotional, social, and spiritual aspects of the learner.*
Higher-order thinking and problem-solving skills should be developed.	Forest School offers learners the opportunity to take supported risks appropriate for the environment and for themselves.

The range of individual differences should be taken into account in the learning process.	• *Forest school opportunities are designed to build on an individual's innate motivation, positive attitudes, and / or interests.* • *Forest School uses tools and fires only where deemed appropriate for learners, and depending on the completion of a baseline risk assessment.* • *Any Forest School experience follows a risk-benefit process managed jointly by the practitioner and the learner that is tailored to the developmental stage of the learner.*
Learning should involve guided activities and discovery methods. **Skills that facilitate learning transfer should be nurtured.**	Forest School is run by qualified Forest School practitioners who continuously maintain and develop their professional practice. • *Forest School is led by qualified Forest School practitioners, who are required to hold a minimum of an accredited Level 3 Forest School qualification. Find more information on Forest School qualifications here.* • *There is a high ratio of practitioners / adults to learners.* • *Practitioners and adults regularly helping at Forest School are subject to relevant checks to determine their suitability to have prolonged contact with children, young people and vulnerable people.* • *Practitioners must have an up-to-date first-aid qualification, including paediatric (if appropriate) and outdoor elements.* • *Forest School is supported by relevant working documents that contain all the policies and procedures required to run Forest School and establish the roles*

	and responsibilities of staff and volunteers. *• The forest school leader is a reflective practitioner and, therefore, sees him/herself as a learner, too.*
The child's sense of wonder and natural curiosity is a primary motivating factor in learning. **The child is an active agent in his or her learning.** **The child's existing knowledge and experience form the base for learning.**	Forest School uses a range of learner-centred processes to create a community for development and learning. *• Forest School uses a learner-centred pedagogical approach that is responsive to the needs and interests of learners.* *• The practitioner models the pedagogy, which they promote during their programmes through careful planning, appropriate dialogue, and relationship building.* *• Play and choice are an integral part of the Forest School learning process, and play is recognised as vital to learning and development at Forest School.* *• Forest School provides a stimulus for all learning preferences and dispositions.* *• Reflective practice is a feature of each session to ensure that learners and practitioners can understand their achievements, develop emotional intelligence, and plan for the future.* *• Practitioner observation is an important element of Forest School pedagogy. Observations feed into 'scaffolding' and tailoring experiences to learning and development at Forest School.*

Through an exploration of educational theory and pedagogical processes underpinning the vision, aims, principles, broad objectives, subject content

objectives, concepts and skill development, and assessment of the Irish PSC and the FS approach to learning and teaching, it is clear that similarities exist. The uniqueness of the child and his/her lived experience are central to the construction of new knowledge. Integration of experiences between communities, such as home and school, is key to creating effective learning opportunities. All dimensions of the child's life, spiritual, moral, cognitive, emotional, imaginative, aesthetic, social, and physical, should be nurtured to provide enrichment in learning and lay the foundation for happiness and fulfilment. Importance is placed on developmental approaches to learning and teaching in both the Irish PSC and the FS approach, as knowledge is constructed through long-term, frequent participation in stimulating learning environments that correspond to the child's learning needs. A balance between child-led self-assessment and adult-led observations of learning informs inclusive learning opportunities in both approaches. Best practice is informed by high standards of qualification and participation in CPD and is directed by school policy and procedures. Learning and teaching are propelled by careful planning and preparation, while emergent, experiential problem- and inquiry-based learning opportunities allow child-led discoveries and questions.

However, tensions may arise in the delivery of emergent "Friluftsliv"-inspired philosophies underpinning FS within the predetermined learning outcomes of the Irish PSC, as outlined previously (Cree and Robb 2021). Thus, a balance between serendipitous and rigorous approaches must be achieved (Loynes 2007). The following section explores emergent, experiential, problem- and inquiry-based approaches to learning and teaching, as promoted in both approaches, to inform how teachers and FSLs may strike this balance.

2.10 Emergent, Experiential and Inquiry-Based Approaches to Learning and Teaching

This segment builds on the conversation regarding experiential and inquiry-based learning processes introduced in Section 1.5.3.2 of the previous chapter. Experiential and inquiry-based learning can be viewed along a continuum from highly structured teacher-led to child-initiated emergent events that include concrete experiences, reflective observations, abstract conceptualisations, and active experimentation (Taylor 2013; Robinson 2015; Bradford 2018). Emergent and

experiential learning approaches are powerful pedagogical methodologies as learners become actively engaged, resulting in deeper understanding and enhanced skill development (Kolb et al. 2001; Bradford 2018). However, critiques outline a lack of accountability for children's learning achievements without the provision of an outcome-based curriculum (Miller et al. 2012), and thus, state that emergent experiential approaches require adult-led input to support and extend the attainment of new knowledge (Waite 2011; Wood 2013). Moreover, it ought to be recognised that some children are uncomfortable without firm goals and a definite plan of action and may benefit from intermediate goals defined by periodic reflections on learning (Dalke et al. 2007). Challenges of finding balance in these approaches are apparent, as emergent learning is concerned with process and development, rather than a sole focus on content attainment, and thus works best with broad learning goals (Dalke et al. 2007; Loynes 2007). Furthermore, planning for emergent learning can prove challenging as the teacher must consider why certain activities are planned, if they are meeting pedagogical needs, and if s/he holds the skills to debrief and handle unforeseen issues that may arise in an unstructured learning environment (Bradford 2018).

A teacher plans the curricular program, interacts with children to promote learning, and provides nurturance and guidance (Edwards 2012). S/he observes and assesses the child's progress, while educating parent(s) or guardian(s) and encouraging family involvement (Edwards 2012). In addition to this, the emergent, experiential educator is seen as a co-constructor of knowledge and the creator of the environment as a third teacher in response to the child's development (Swann 2012; Wood 2013; Ring and O'Sullivan 2018). S/he exchanges understandings to become a supporter of the competent child. The experiential teacher documents and researches learning, partners with parents, and aims to be a listener, provocateur, and negotiator of meaning (Edwards 2012). Assessment of learning occurs through observation and interpretation of pedagogical documentation, or work completed by the child, to co-construct knowledge (Dahlberg 2012; Rinaldi 2012) and calls for the input of the child's voice through various self-assessment methods (Dalke et al. 2007; Bradford 2018). Interpretation occurs through stimulated recall, which is

dialogue between the teacher and child inspired by the pedagogical documentation (Olsson 2009; Dahlberg 2012; Edwards 2012; Foreman and Fyfe 2012; Rinaldi 2012). This negotiated analysis of learning, outlined in Figure 2.18, below, seeks to "uncover the children's beliefs, assumptions, or theories about the way the physical or social world works" (Forman and Fyfe 2012, p.248).

Design: Record of a plan or intended solution	Discourse: The deep desire to understand each other's world	Documentation: Any record of performance that contains sufficient detail to help others understand the behaviour recorded
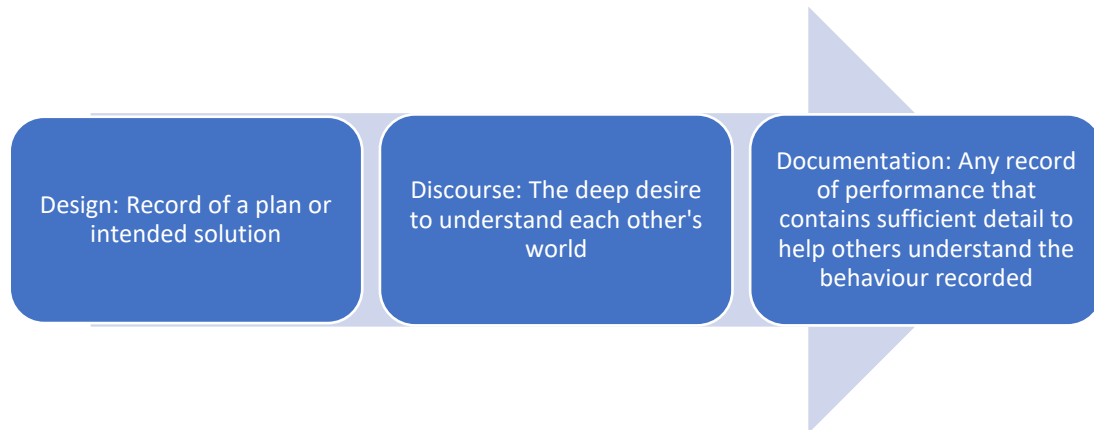
Figure 2.18 Components of Negotiated Learning (Forman and Fyfe 2012)

The teacher becomes the creator, synthesiser, and reflector of learning, with the primary responsibility for making classroom activities visible and meaningful, and as a result, a greater demand is placed on him/her to accommodate a wide range of possible learning directions (Dalke et al. 2007). However, in return, the child and teacher engage in close interaction and enjoy rich learning experiences (Dalke et al. 2007).

2.11 Conclusion

This chapter introduced the reader to the vision, aims, principles, broad objectives, subject content objectives, concepts and skills of the Irish PSC (NCCA 1999a), which are grounded in child-centred theories, namely Dewey (1897; 1900; 1902; 1916; 1933; 1934; 1938a; 1938b; 1958) and Montessori (1949) and shaped by the Rights the Child (UN 2010) to ensure a holistic approach to learning and teaching. However, arguments have emerged about the impact of curriculum overload (O'Rourke 2018) and FS, an innovative approach to learning and teaching in which the teacher can facilitate active, discovery-based learning opportunities within collaborative and inclusive settings, may be an antidote to this problem. This playful approach to learning outdoors can develop compassion, empathy, kindness, and

respect for nature (Wiedel-Lubinski and Madigan 2020), which Madden (2019) argues has become displaced in the scientific and functional approach to learning about the natural environment advocated in recent curricular adaptations. Moreover, there is scope to integrate nature-based learning across a range of subjects within the Irish PSC, such as The Arts, SPHE and PE. Play-based learning, advocated by theorists Froebel (1826), Steiner (1916), Dewey (1933) and Montessori (1949) as an effective learning methodology, was recently incorporated into the Irish PSC through Aistear: The Early Childhood Curriculum Framework (NCCA 2009). However, tensions have emerged between the structure of a formal curriculum and emergent play-based approaches. Moreover, issues regarding broad definitions of play have resulted in teacher uncertainty and disparities in how play is implemented and can result in a dominance of free, child-directed pretend play. Therefore, reflexive practice during integrated interactive pedagogy is required to allow the teacher to reconceptualise and plan play according to curricular objectives. It is evident that the structured learning objectives of the Irish PSC may challenge the "Friluftsliv", emergent, experiential child-led approach to learning and teaching that underpins the guiding principles of FS. Therefore, it was imperative that the teachers' perspectives were gathered in this study to capture their reality of learning and teaching through emergent, experiential, and child-led approaches during FS. In addition to this, the dominance of social learning outcomes of the FS approach, as documented in previous studies, posed the question whether the Irish PSC subject content objectives would be achieved during FS sessions? It was also vital that the child's voice was placed at the centre of this study to determine if this approach remained true to the underpinning philosophy of child-centred learning.

The following chapter will revisit the conceptual framework, described in Chapter One, and literature explored in this chapter to provide the reader with a detailed description of foundations of the research questions, and subsequently the methodology employed in this study.

Chapter Three

Methodology

Tree Propagation

3.1 Introduction

Propagation is the process of growing new plants. Beech trees, the metaphor used in Chapter Two, are commonly propagated from seed. This chapter is titled "Tree Propagation" as the researcher envisioned new understanding and growth occurring from the research process.

The conceptual framework and positionality of the researcher, explored in Chapter One, determined the methodological approach applied in this project (Yin 2018). While limitations of this conceptual framework were delineated previously, the study was grounded in Bronfenbrenner's (1979; Bronfenbrenner and Morris 2006) Bio-ecological process-person-context-time (PPCT) Model, supported by Dewey's philosophical theories (1897; 1900; 1902; 1916; 1933; 1934; 1938a; 1938b; 1958) regarding problem-, inquiry-, and experiential-based learning and teaching approaches alongside research-based models of practice, namely the Learning Combination Lock Model (LCL), Legitimate Peripheral Participation (LPP) and Flow Learning Methods (Cornell 1998; Lave and Wenger 2016; Beard and Wilson 2018). Subsequently, the research questions evolved from an analysis of literature explored in the previous chapter (Cohen et al. 2011; Thomas 2013), which highlighted the need for further systematic research of the Forest School (FS) approach to learning and teaching, specifically a critical exploration in the context of the Irish Primary School Curriculum (PSC). Challenges regarding this emergent, child-led, play-based experiential approach to learning and teaching within the formal structure of a curriculum, the dominance of social learning outcomes in previous studies, and the importance of the centrality of the child's voice provided the researcher with the foundations to form research questions.

This methodology chapter seeks to interrogate the research questions, while articulating the philosophical foundations underpinning the research to present a rationale for the qualitative methodology adopted and justify the data collection methods employed (Blaikie 2010; Thomas 2013), specifically, the suitability of the

case study approach (Yin 2018) and the steps taken to maintain the integrity of the research. Limitations are acknowledged and the chapter concludes with a detailed exploration of the data-analysis strategies adopted.

3.1.1 The Researcher's Previous Forest School Experience

The researcher embarked on the FS Leadership continuing professional development (CPD) programme in late 2015 through early 2016 with "Earth Force Education", now renamed "Forest School Ireland" (Forest School Ireland 2021). Initial perceptions of the FS approach were generally positive, as outlined in the following excerpt from the researcher's personal diary at the time of participation.

> "I've met so many different people from so many backgrounds and experiences. All are so passionate about educating children in a new and meaningful way.
>
> My mind has been opened to new possibilities- new ways of learning".
>
> (Mar 2016)

Following these initial perceptions, the researcher noted additional perspectives on this emergent, experiential, child-led approach to learning and teaching as she later delivered FS sessions in her primary school setting.

> "I found the lessons to be very peaceful, I even noticed that I was stepping back from instructing and instead facilitating the learning."
>
> (Apr 2016)

Further impressions were acknowledged in a public post published on the researcher's blog, which is included below (Murphy 2016). The entry outlined positive behavioural changes during the participation of children in emerging, experiential learning outdoors during FS that was observed by a primary school teacher. Furthermore, the joy in teaching outdoors experienced by the researcher, explored in Section 1.2 previously, was recognised.

> "While visiting my sister in England last year, she mentioned that her son would start a primary school that was a 'Forest School'. I was intrigued by this title, so I visited the school (Holly Trees Primary School, Brentwood, Essex) to see how it operated. The deputy principal was very enthusiastic about this

approach to learning and described the positive impact it had on the behaviour of the children at the school.

Children participate in constructive play outside during Forest School. They are taught skills such as knot tying, fire making, shelter building, and knife use. Initially, these activities sounded terrifying to me, as I worried about liability and insurance issues, but I learned that risk assessments are completed, and tasks are carefully considered before implementation.

The Forest School programme is child-led, which means that if the child finds an object that they are interested in, it becomes the focus of the learning. Child-to-adult ratios are kept small for this reason.

There is something so healing about working with nature. There is also great satisfaction when you have nourished a plant so carefully throughout winter and spring and it blooms in summer. Nature demands patience. It cannot be rushed. For me, this provides links with the process of making art. I feel the same stillness. I wanted to bring this feeling of stillness to the classroom."

(Murphy 2016)

However, later diary entries outlined that the FS approach was at variance with existing concepts of what constitutes effective learning and teaching, as expressed following the inaugural Irish Forest School Association (IFSA) meeting.

"Forest School Leaders were concerned that Forest School is implemented to a high standard, which the continuing professional development course strives to achieve. There are six guiding principles, and the general consensus is that these need to remain intact. Interestingly, one of these principles is that learning outdoors occurs over a long period of time. The idea of one-day camps does not comply with this ethos, and yet, it is a principle many leaders admit to compromising, as parents and guardians request it. Others raised concerns about the requirement that Forest School should be located in a forest. This is something I deliberately chose not to do for financial reasons. Others had an issue with the word 'school'. They see school as a structure with rules and do not envision Forest School as this. I found this difficult to hear, as I think they view primary school teachers in a very traditional way."

(Sep 2016)

While there is no formal structure to a FS session, the FSL in this study structured the FS sessions around a natural cycle of flow learning, as introduced in Section 1.5.3.4 in the previous chapter (Young et al. 2016). Each week the children met the FSL at

the "guardian tree" to seek permission from nature to enter the forest. The children then sat around the camp area and enjoyed a snack before the FSL reminded them of the boundaries and any safety issues which she felt necessary to highlight. Then, the FS session began with an opening circle. Here the children demonstrated their feelings through hand gestures and were offered an opportunity to request learning experiences, such as a game they wished to play, or tool they sought to use. Each week, the FSL reminded the children of resources available in the forest, such as clay, ropes, and tools. The FSL often held informal conversations with the CTs at this time. She asked questions about children's form and shared information regarding adult roles, such as the need for someone to monitor tree climbing, play in the stream, or how to facilitate skill-based learning activities. The FS session would then begin with a high-energy movement game. After this, the children engaged in focused skill-based activities, such as shelter building, fire making, knife use, or tree climbing. The session then became less structured, and the children availed of child-led free play. Each FS session finished with a closing circle in which each child shared his/her reflections on learning before the children left the forest and returned to their school.

The following section will detail processes the researcher undertook to address concerns which emerged from the literature and personal experience previously outlined, to ensure the research questions propelling this study were formed with academic rigour and credibility required at Doctor of Philosophy (PhD) level.

3.2 Forming the Research Questions

Recent studies (Tudge et al. 2009; Jaeger 2016) explore the application of Bronfenbrenner's (1979; Bronfenbrenner and Morris 2006) Bio-ecological and PPCT Model as a theoretical foundation for research studies. Through a critical analysis of the historical development of Bronfenbrenner's work, this section will outline how the Bio-ecological PPCT Model was applied to the methodological processes in this study, prior to an analysis of the research questions.

In his earliest Ecological Model (1975), Bronfenbrenner argued that studies on the development of a child should consider the interaction of context and activity

while comparing two systems or system components such as the child's family or peer groups (Jaeger 2016). However, in 1976, Bronfenbrenner revisited and developed his theory further, which posited that research should reflect the social backgrounds of participants. In addition to this, he also outlined the potential for members of different systems to affect each other, and whether this occurred directly or indirectly, he stated that it must be considered (Jaeger 2016). This model was developed further in 1983, when Bronfenbrenner outlined that multiple studies must be included in a research design to add complexity to ensure gender and socioeconomic status are considered (Bronfenbrenner and Crouter 1983, cited in Jaeger 2016). Again, in 1988, Bronfenbrenner added a further requirement that systematic data regarding domains of development, such as context, personal characteristics, and process, should be included in research studies (Jaeger 2016). By 1989, Bronfenbrenner realised the importance of the inclusion of at least two macrosystems, such as socioeconomic status or ethnicity in a study. Bronfenbrenner and Morris' (1998) theory then stated that interactions and/or synergies which occurred were more important than the sheer number of systems (Jaeger 2016).

It is now agreed that studies can be effectively designed utilising Bronfenbrenner's Bio-ecological Model simply as a foundation for the research (Jaeger 2016; Tudge 2016) as Bronfenbrenner and Morris (2006) argue "the specific components of PPCT to be included in a given investigation should be those that, from a theoretical perspective, are maximally relevant to the research question under investigation" (p. 1007). Tudge et al. (2009) suggest that a study founded on Bronfenbrenner's Bio-ecological Model should include at least one proximal process (interactions between children and their caregivers) and two of the following components: (a) characteristics of the person(s) involved, (b) at least two micro or macrosystems, and (c) longitudinal data-collection. However, Navarro et al.'s (2022) recent publication argues the importance of the inclusion of person characteristics, context, time, and proximal processes in all studies. Thus, this study employed proximal processes of Irish primary school aged children and class teachers (CT) with no previous experience of the FS approach over the course of an academic year.

In addition to this, the complex interactions of the researcher and participants within this model are outlined through critical constructivist approaches of truth (Lather 2006; O'Toole 2016), which are discussed in Section 3.3.3.2.1. Truth within this paradigm is viewed as a construction of socio-political power whereby action is influenced by cultural and political influences, and it is argued that the PPCT model draws on both an interpretive and a critical paradigm (Lather 2006; O'Toole 2016). Class level, culture, Delivering Equality of Opportunity in Schools[12] (DEIS) (Department of Education and Science (DESa) 2005) school status, and inclusion of all learning needs are considered in interpretivist and critical constructivist paradigms through the provision of the voice of the participants. This incorporation of the child's voice was omitted in a previous FS study (Lee-Hammond and Jackson-Barrett 2013) which was founded on Bronfenbrenner's (1979; Bronfenbrenner and Morris 2006) Bio-ecological Model, thus disregarding the vision of the developing child as an active agent (Bronfenbrenner and Morris 1998) and the foundation philosophy and philosophy of child-led learning in the FS approach (Barrable and Arvanitis 2018; IFSA 2019). Therefore, this research uses Bronfenbrenner's foci to measure the FS approach to learning outdoors in the Irish PSC by accessing the perspectives of the children in addition to that of the CTs involved.

The topics of concern in each system have been drawn from the literature, as explored in the previous chapters. Figure 3.1, below, depicts these themes which include: the Irish PSC, the FS approach, learning and teaching outdoors, playful pedagogies, the role of the teacher, inclusion of all learners, and the importance of the voice of the child.

---

[12]   Schools in communities at risk of disadvantage and social exclusion (DESa 2005a)
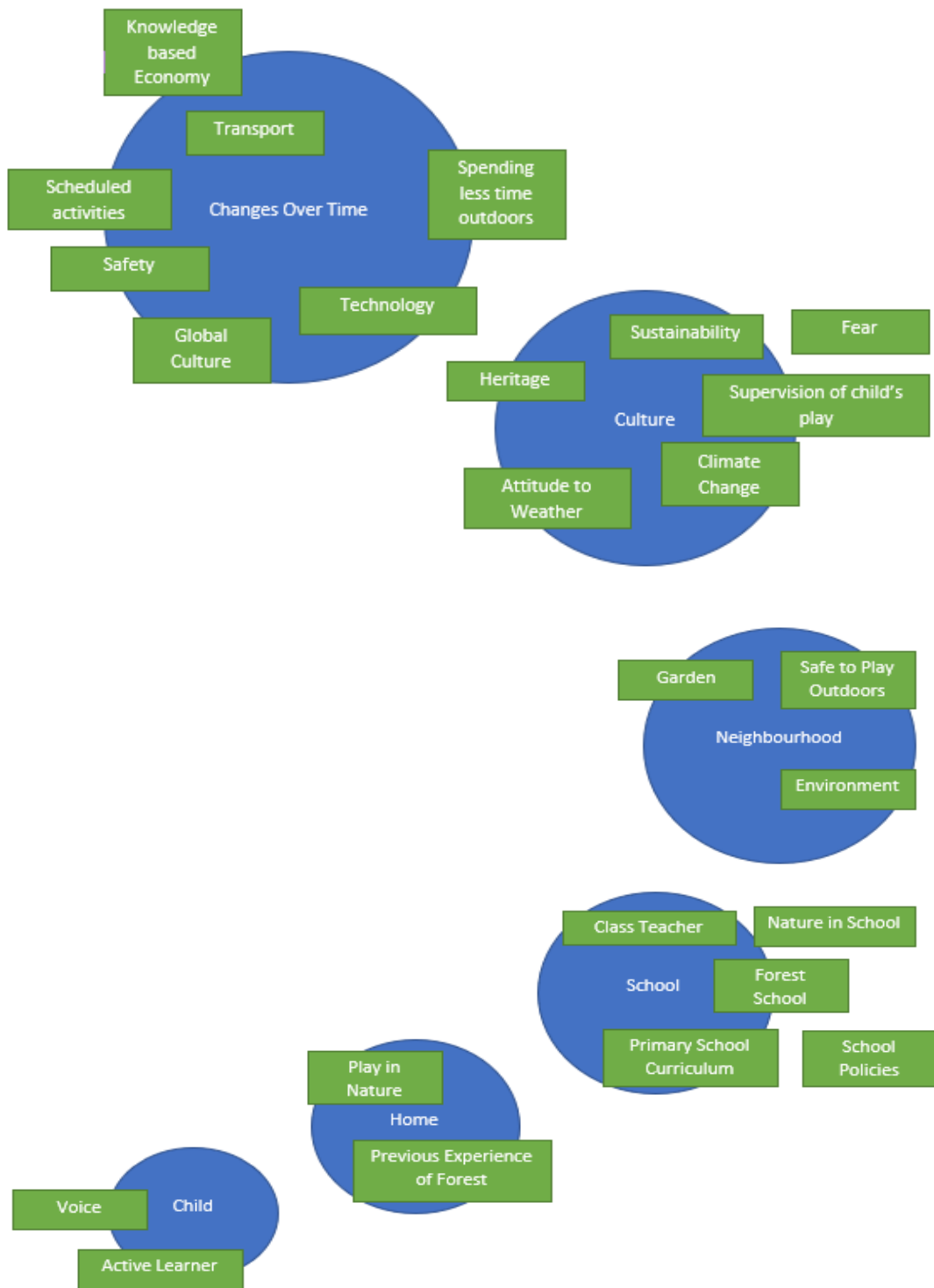
Figure 3.1 A Deconstructed Bio-ecological Model Incorporating the Main Topics of Concern from Previous Literature and Research (Bronfenbrenner 1979; Bronfenbrenner and Morris 2006)

The following section will now delve into an analysis of these themes which emerged from this process to form the research questions employed in this study.

3.2.1 The Research Questions Employed in this Study

The researcher was concerned to explore whether the learning and teaching methodologies associated with the guiding principles of the FS approach could usefully contribute to the realisation of the vision, aims, principles, broad objectives, subject content objectives, concepts and skill development, and assessment of the Irish PSC. The specific question propelling this research was *"How do Children in Senior Infants, Second Class, Fourth Class and Fifth Class and their Teachers Perceive the Impact of the Introduction of Forest School Sessions on Learning and Teaching in an Irish Primary School?"*, and the following questions that subsequently emerged from this were:

> ➢ *How do the children perceive the Forest School sessions?*
>
> ➢ *What principles and subject content of the Irish Primary School Curriculum, to include Aistear: The learning outcomes of the Early Childhood Curriculum Framework, are observed during the Forest School sessions?*
>
> ➢ *How do the class teachers perceive the Forest School sessions?*
>
> ➢ *What learning and teaching methodologies, if any, do the class teachers identify as unique to the Forest School approach?*

These sub-questions were formed as "what" and "how" questions. "What" questions seek to understand contemporary sets of events (Yin 2018) through eliciting explanatory responses (Blaikie 2010), while "how" questions are concerned with creating change (Blaikie 2010). The following sections provide deeper explorations of these "what" and "how" questions.

3.2.1.1 "What" Questions

> ➢ *What principles and subject content of the Irish Primary School Curriculum, to include Aistear: The learning outcomes of the Early Childhood Curriculum Framework, are observed during the Forest School sessions?*

The researcher sought to identify and record the principles and subject content of the Irish PSC, previously detailed in the literature review chapter, through observations of learning and teaching during FS sessions (National Council for Curriculum and Assessment (NCCA) 1999a). These observations included children's and teachers' (to include support staff) participation in activities during FS sessions,

as well as the incidence and quality of active learning approaches. Methodologies of direct teaching and guided discovery, talk and discussion, problem-solving, the use of the environment, the incorporation of lower- and higher-order questioning, and collaborative learning opportunities, learning through play, and skills through content were recorded (NCCA 1999a; 2009a). In addition to this, incidences provided for children to reflect on and self-assess their learning, along with observations of inclusive methodologies of additional support, adapted resources, pace of learning, and teaching provided to children were recorded (Department of Education and Skills (DESb) 2017a). Moreover, evidence of curricular subject objectives, to include Aistear: The learning outcomes of the Early Childhood Curriculum Framework (NCCA 2009a) learning outcomes in the senior infant class were identified and recorded.

> *What learning and teaching methodologies do the class teachers identify as unique to the Forest School approach?*

Some "what" questions are actually a form of "how many", or "how much" (Yin 2018, p. 10) and this question, which sought the perspectives of CTs on the learning and teaching methodologies observed during the FS sessions, is one such example. The aim was to understand whether unique approaches to learning and teaching were observed during FS and, if so, whether CTs were interested in using these methodologies in future practice.

3.2.1.2 "How" Questions

A timespan approach was chosen to answer "how" questions, as advised by Blaikie (2010).

> *How do the children perceive the Forest School sessions?*

This question sought information on the following aspects of the perceptions of the children: their previous knowledge of a "forest", skills learned during FS, and experiences of their time in the forest, both positive and negative. The researcher was also concerned to hear the children's perspectives on the use of tools during skill-based activities, namely the bowsaw, ropes, peelers for whittling and flint and steel for fire making.

> *How do the class teachers perceive the Forest School sessions?*

The researcher aimed to understand the previous knowledge and experience of CTs on outdoor educational approaches to learning and teaching. Pedagogical documentation was then utilised during "Stimulated Recall", as outlined previously in the literature review chapter and in Section 3.5.2, to uncover the CTs' overall perceptions of the FS sessions (Olsson 2009). Questions regarding the attainment of the Irish PSC's vision, aims, principles, broad objectives, subject content objectives, concepts and skill development, and assessment were then asked, and responses were analysed against observations recorded.

The following sections will detail the development of these research questions in the sequence of the construction of a research framework, to include philosophical and theoretical underpinnings; the research approach employed; data-collection methods utilised; the manner in which research integrity was maintained throughout the study; data-analysis strategies and an acknowledgement of limitations of the study.

3.3 Constructing a Research Framework
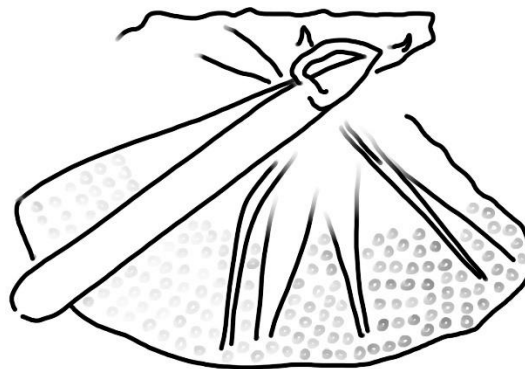
Figure 3.2 Stratification of Research "Seeds" (Murphy 2019)

Stratification is the process of stimulating natural conditions for seeds to germinate. Beech seeds experience initial growth during exposure to the natural freeze over winter and thaw in spring. During a controlled stratification process, seeds are placed in a bag, buried outdoors in winter, and sown in the soil in spring, as illustrated above. "Stratification" of the research occurred when the "seeds" collected (data) were "germinated" through placement within the philosophical foundations of the research framework, as discussed in the following sections.

The following sections will outline the research framework and subsequently, the approach, methods, and associated data-collection instruments that were determined by the research questions, as is common in social science studies (Boehm and Weinberg 1997; Blaikie 2010; Thomas and Hodges 2010; Cohen et al. 2011; Thomas 2013; Yin 2018).

3.3.1 Focusing the Research Questions to Develop a Research Approach

To ensure a systematic approach was applied to data-collection, the researcher used Yin (2018) cyclical research design, as illustrated in Figure 3.3. This figure outlines the iterative process involved in the research design, which is based on a cyclical process of prototyping, testing, analysing, and refining the research process.
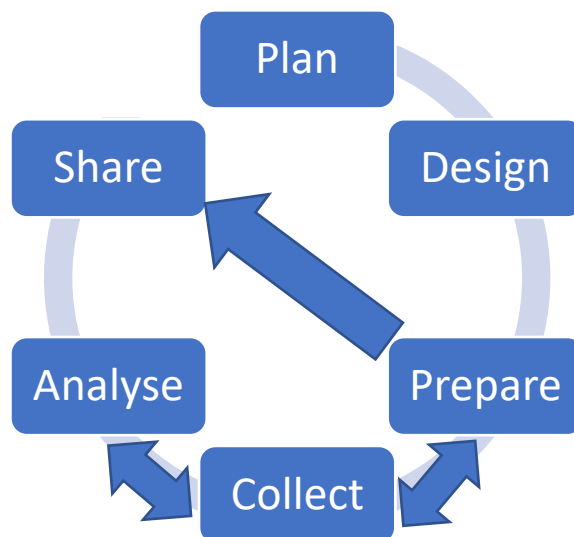
Figure 3.3 Yin's Case Study Design Approach (2018, p. 24)

Evidence of the application of this cyclical approach during the design process is apparent in the alteration of the structure of the observation report during the first two weeks of data-collection, as included in Appendix C.1. At this point, the pilot data-collection instrument was streamlined to ensure that there was a clear focus on the research questions. The five components of Yin's (2018) case study research design provided the researcher with further guidance to focus and explore the research. These components are discussed below.

3.3.1.1 Yin's (2018) Components of the Case Study Research Design

Yin (2018) suggests five components of a good case study design. They include study questions, propositions, unit of analysis, the process of linking data to propositions, and criteria for interpreting findings.

The study questions emerged after a review of the literature that led the study, providing it with purpose, criteria, and direction in which it was conducted. Construction of these questions was completed in three stages. It began with an initial exploration of the literature to narrow the interest of the researcher to a key topic. During this stage, the researcher explored history and policy which shaped the vision, aims, principles, broad objectives, subject content objectives, concepts skills and assessment strategies of the Irish PSC, while simultaneously engaging in an in-depth review of the FS approach to learning and teaching. In the second stage, key studies on outdoor education and, more specifically, the FS approach in the primary education setting were explored to examine whether they suggested new questions for future research. These studies outlined the benefits of delivering curricular objectives through the FS approach (O'Brien 2009; Mackinder 2017; Coates and Pimlott-Wilson 2019), namely: measured risk taking (Maynard 2007; Elliott 2015; Harris 2017), social and communication skills (Swarbrick et al. 2004; Ridgers et al. 2012; Waite et al. 2015; Harris 2017), gross and fine motor skill development (O'Brien 2009; Ridgers et al. 2012; Waite et al. 2015; Turtle et al. 2015) and improvement in physical development and stamina (Ridgers et al. 2012; Turtle et al. 2015). In addition to this, studies highlighted the attainment of environmental and sustainability education through FS (Cumming and Nash 2015; Turtle et al. 2015; Harris 2017; Cree and Robb 2021). Furthermore, the literature outlined potential for the participation and motivation of children with special educational needs as learning and teaching in FS occurs through reality-based activities (Westwood 2015; Lave and Wenger 2016; James 2018). However, the need to deepen the research-based understanding of this approach was also apparent (Leather 2013; 2018). A requirement for further investigation to attain how observed practice relates to the guiding principles of the FS approach was outlined (Leather 2018), and questions about the adaptation of a Scandinavian style of learning and teaching in the new contexts were raised (Knight 2013; 2018; Leather 2013; 2018; Davenport 2019). In the third stage of the literature

review, an exploration of educational theory and pedagogical processes underpinning the vision, aims, principles, broad objectives, and subject content objectives of the Irish PSC and the guiding principles of the FS approach to learning and teaching was conducted. Although similarities were evident, disparities in levels of guidance in the FS approach and predetermined learning outcomes of a curriculum were clear (Swarbrick et al. 2004; Loynes 2007; Leather 2013; 2018). In Yin's (2018) second component of a case study, the proposition of interrogating guiding FS principles against a potential realisation of the vision, aims, principles, broad objectives, subject content objectives, and concepts and skill development of the Irish PSC developed from a combination of the researcher's positionality, teaching experience, reflective practice, and engagement with the literature. This occurred within Yin's (2018) third component, known as the unit of analysis, which was a single case of four mainstream class levels in an Irish primary school. Variables within this unit, which are defined as measurable attributes of things that can be counted (Thomas 2013), are identified in Section 3.4.1.3. The fourth component, which is concerned with processes of linking data to propositions, is explored in detail through the data development procedures outlined in Section 3.7.2.3.1. In this component, pattern-matching was employed to link the dependent variable of realising the Irish PSC's vision, aims, principles, broad objectives, subject content objectives, and concepts and skills to the independent variable of the FS approach to learning and teaching. Criteria for interpreting findings, Yin's (2018) fifth component, is also included in Section 3.7.2.3.2; Explanation Building. In this section, contrary explanations for findings such as the Hawthorn Effect, which may occur when researchers' bias subconsciously influences participants (Thomas 2013), are identified, and addressed. A thorough exploration of these criteria to include reflexivity and objectivity, dependability, validity and credibility, reliability and transferability, and ethical considerations is included throughout Research Integrity, in Section 3.6.

This leads to the philosophical underpinnings of the ontological and epistemological foundations on which this study is based, as explored in the following section.

3.3.2 Philosophical Underpinnings of the Research

This project is situated in the qualitative, interpretive paradigm and employs a hermeneutic enquiry position (Cohen et al. 2011; Thomas 2013), as consistent with the philosophical stance of the researcher to gather children's and teachers' perspectives of approaches to learning and teaching outdoors. Ontology is the study of being (Crotty 1998) and is concerned with what constitutes reality. It outlines the researcher's position of "how things really are" and "how things really work" (Scotland 2012). Epistemology is concerned with the nature and forms of knowledge (Cohen et al. 2010; Scotland 2012). Epistemological assumptions are concerned with how knowledge can be created, acquired, and communicated (Scotland 2012). While the ontological position of positivism assumes that reality is not mediated by the senses (Scotland 2012), the ontological position of interpretivism (relativism) views reality as subjective and differs from person to person. Positivist epistemology is one of objectivism in which meaning solely resides in objects, while the interpretivist epistemology is one of subjectivism which is based on real world phenomena (Scotland 2012). While research integrity must be achieved during interpretivist research through dependability, validity, and credibility to ensure reliability of findings, interpretive methods provide insight and understandings of behaviour and explain actions from the perspectives of participants to provide rich evidence (Cohen et al. 2010; Scotland 2012). The ontological position of relativism (non-realist) and epistemological stances of subjectivism and constructivism adopted impacted on the chosen methodology in which the research is grounded (Cohen et al. 2000; 2011; Patton 2015). The following sections will explore qualitative and interpretive methods of research and constructivism which were applied in this study as a result.

3.3.2.1 Ontological Foundations of the Research

Ontology, or "the nature of reality or a phenomenon" (Cohen et al. 2011, p. 33) is viewed as a precursor to epistemology by constructivists who believe that there is no single reality and context is everything (Simon and Goes 2013). This research is based in the ontological position of relativism (non-realist), which favours qualitative and interpretive methods of research (Cohen et al. 2011; Patton 2015). As a result, the researcher aimed to interpret participants' subjective experience of reality, which is influenced by society, in this ontologically relativist study through the

interpretivist paradigm (Crotty 1998; Cohen et al. 2000; 2011; Thomas 2013; Patton 2015). Perspectives were gathered through open-ended observations and interviews that examined different perceptions, or realities of the participants (Patton 2015). Therefore, the phenomenon of the introduction of the FS approach is understood within the context of the case of this study and multiple points of view were sought with questions: *"What did you think of the Forest School sessions?"* (CT), *"Do you see any benefits of utilising the Forest School approach in the Irish Primary School Curriculum context? If so, what are they?"* (CT), *"Did you like learning in the forest?"* (Children), *"What experiences in the forest did you enjoy? Why?"* and *"Was there an experience in the forest that you did not enjoy? Why?"* (Children) which are included in Appendices E.1 and F.2.

3.3.2.2 Epistemological Foundations of the Research

Epistemology concerns itself with the study of our knowledge of the world (Thomas 2013; Walliman 2018) and "how we come to know these multiple realities" (Cohen et al. 2011, p. 33). In the interpretivist paradigm, previously introduced, knowledge is constructed through participants' views. Constructivism (and social constructivism) is the epistemological assumption of interpretation. In this paradigm, the understanding of the phenomenon is achieved through interpreting the intentions of those involved (Cohen et al. 2000). Participants in this study were active knowers who understood and reflected on social phenomena (Cohen et al. 2000; Blaikie 2010). Situations were viewed as fluid and changing, rather than fixed and static, as it is impossible for individuals to view the world unaffected by concepts, theories, background knowledge, and experience (Blaikie 2010). Therefore, events of FS and behaviours in learning were interpretated in this context throughout a particular time.

Knowledge comes from one's reasoning, or rationalism, through inductive and deductive strategies (Thomas 2013). Inductive reasoning occurs when conclusions are drawn from the data, whereas deductive reasoning begins with a hypothesis and examines whether the data reach this specific logical conclusion (Cohen et al. 2011; Thomas 2013; Patton 2015). Although inductive reasoning, where knowledge emerges from the data, is more common in qualitative studies, Patton

(2015) argues that it does not need to exclude deductive reasoning. Therefore, this naturalistic study is concerned with examining situations through the experience of participants using deductive research strategies (Cohen et al. 2011; Thomas 2013). The implications for this are discussed further in Section 3.7, during the discussion of the data-analysis processes.

The methodological approach and research methods evolve from the ontological and epistemological underpinnings that guide the theoretical perspectives of this study, as illustrated in Figure 3.4.

Ontology	• Relativism (Non-Realist)
Epistemology	• Subjectivism • Constructivism
Theoretical Perspective	• Interpretivism
Methodology	• Qualitative Approach
Methods	• Case Study
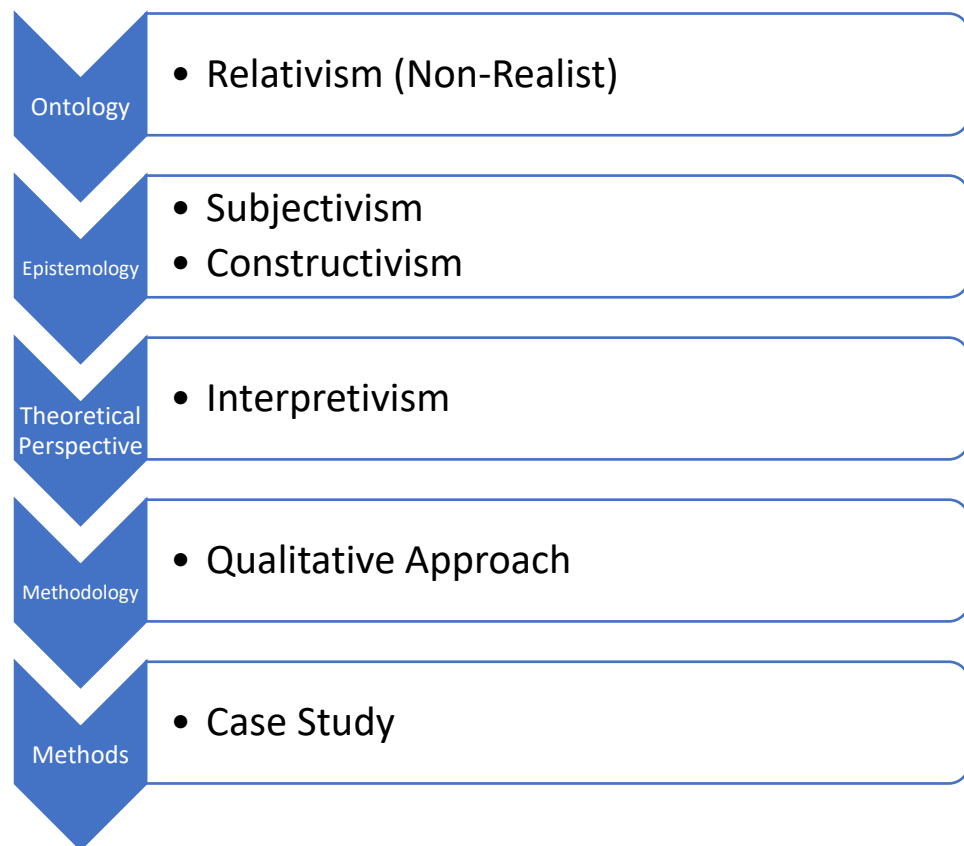
Figure 3.4 Ontological and Epistemological Foundations of The Research (adapted from Crotty 1998)

This methodological approach will be explored following the examination of interpretivist and constructivist theoretical perspectives, which are discussed in the following section.

3.3.3 Theoretical Perspectives Underpinning the Research

Values and assumptions regarding methodological theory, described as paradigms, determined how the research was conducted and what was deemed important (Cohen et al. 2011). This section explores the theoretical perspectives of interpretivism through the paradigms of constructivism and critical constructivism to outline how these approaches are relevant to this study. Interpretive methods are ideally suited and compatible with Bronfenbrenner's (1979; Bronfenbrenner and Morris 2006) world view (O'Toole 2016), as the PPCT model focuses on the processes that occur according to the person within the context and time in which they live.

3.3.3.1 Interpretivist Perspective

The interpretivist paradigm stresses the inclusion of interpretation strategies as well as observational techniques to understand the social world (Blaikie 2010; Thomas 2013; Galvin 2016). The early development of ideas now associated with qualitative research is linked to the writings of Kant (1787; 1788; 1790), who proposed that perception relates not only to the senses but to human interpretations of what the senses tell us (Galvin 2016). Similarly to Bronfenbrenner, Dilthey (1883; 1985; 2002) emphasises the importance of understanding the lived experience of people in his development of interpretative thinking (Galvin 2016). He proposes that the foundations of qualitative research should explore lived experiences in order to reveal the connections between the social, cultural, and historical aspects of people's lives (context). Weber (1946; 1949) builds on these theories to argue that people are different from atoms studied by natural scientists as they have free will; thus, the purpose of social research should focus on how people understand and interpret their world (Galvin 2016). As this study places an emphasis on the human interpretation of the social world, the participants' and researcher's interpretations of the phenomena studied hold significant value (Blaikie 2010; Thomas 2013; Galvin 2016). Therefore, the investigator is an instrument in the whole research process and is key to understanding the views of the participants (Blaikie 2010). In addition to this, the complex ways in which a child interacts with many systems in his/her life in the specific context must be considered (Bronfenbrenner 1995). Thus, the researcher draws on the constructivist paradigm, as outlined in the following section, in addition to interpretivism.

3.3.3.2 Constructivist Paradigm

Knowledge is actively constructed by participants in the constructivist approach (Patton 2015; Galvin 2016). This occurs as they engage with the world they are interpreting (Crotty 1998; Patton 2015). Similar to interpretivism, constructivism focuses on understanding lived experiences from the points of view of those who hold it. The interrelatedness of different aspects of people's lives is an important focus, and historical and cultural factors are recognised to play an important role in shaping people's understanding of their world (Patton 2015; Galvin 2016). Therefore, the reality in this research study is subjective and multiple, as seen by the participants.

3.3.3.2.1 Critical Constructivism

In addition to interpretivism and constructivism, the PPCT Model (Bronfenbrenner and Morris 2006) draws on a critical paradigm, as outlined previously in Section 3.2 (Lather 2006; O'Toole 2016). Critical constructivism is based on the understanding that knowledge of the world is an interpretation between people which is created in a contextualised space; thus, knowledge is temporally and culturally situated in a dialogue between culture, institutions and historical context (Kincheloe 2008). Moreover, the self can be retaught and reshaped by social action. As critical constructivism promotes self-analysis that results in changes of attitudes and dispositions, it encourages criticality in the research process (Kincheloe 2008).

3.3.3.3. Qualitative Methodological Approach

Located within the qualitative paradigm, the methodological approach is underpinned by the theoretical perspective of interpretivism (Crotty 1998; Galvin 2016). Qualitative research relies on the views of the participants in research, while asking broad and general questions and collecting data consisting largely of the participant voice (Creswell 2013; Walliman 2018). It is a source of well-grounded data that contains rich descriptions and explanations of processes in identifiable local contexts (Miles and Huberman 2019). Chronological flow is preserved in this approach to provide the reader with thorough explanations of events. Furthermore, good data may uncover unexpected findings and new understandings, since the qualitative researcher can investigate initial conceptions and generate or revise conceptual frameworks (Patton 2015; Miles and Huberman 2019). However, as the

qualitative researcher is the data collector, interpreter, and analyser, it is essential that subjectivity and biases are counteracted with appropriate methodological tools (McGee-Brown 1995; Patton 2015). The case study approach and data-collection methods employed in this research are first discussed in the following sections, prior to a detailed explanation of these subjectivities and biases in Section 3.6; Research Integrity.

3.4 Research Approach Employed

The research approach adopted includes a qualitative research methodological framework, as previously outlined. A case study research method was used, and data-collection methods consisted of semi-structured non-participant observations and semi-structured interviews. Data were also entered into the researcher's memo. Samples of these data are included in Appendices C.1 through F.3, and a detailed description of each method is included in Section 3.5 of this chapter. An overview of the research approach is provided in Figure 3.5 below.

Research Methodology		
Qualitative Methodological Approach		

Research Method		
Case Study		

Data-Collection Methods		
Semi-Strucutred Observations	Researcher Memo	Semi-Strucutred Interviews
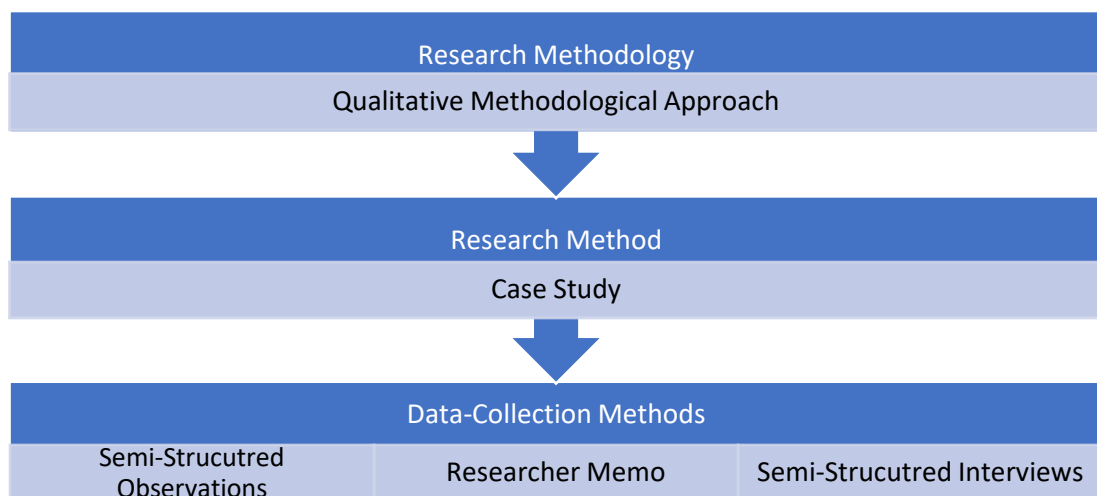
Figure 3.5 The Research Approach

Specifically, Yin's (2018) case study research method was employed, and the following section provides a comprehensive outline of the processes applied.

3.4.1 Yin's (2018) Case Study Research Method
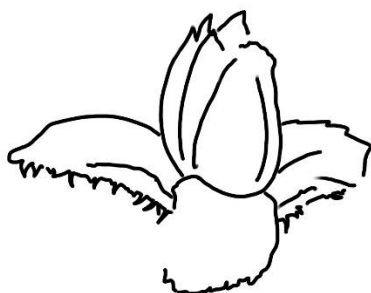
Figure 3.6 Gathering "Seeds" Through Yin's (2018) Case Study Method (Murphy 2019)

The beechnut is the seed of the beech tree. It consists of a hard, textured outer shell and edible smooth triangular kernel seeds within. This seed represents Yin's (2018) case study model, which provides a supportive structure so that the inner seeds (data) can "grow" into seedlings (findings).

Case study research involves the study of a case within a real-life, contemporary context or setting. It provides the researcher with access to real people in real situations, such as small group behaviour (Cohen et al. 2000; Creswell 2013; Yin 2018). Moreover, case studies investigate and report the dynamic and unfolding interactions of events, human relationships, and other factors in a unique instance in action (Cohen et al. 2000). Cumming and Nash (2015) employed the case study research method in their FS study in a school setting, as "it was examining a situation bounded by time and place" (p. 299). The case study approach was applied to this qualitative research project as it was not completely susceptible to numerical analysis, was bound by time and place, and concerned with a real-life study (Cohen et al. 2000; Yin 2018). As this approach requires detailed, in-depth data-collection that includes multiple sources of information (Bell 2010; Creswell 2013), Section 3.4.1.2 provides the reader with an in-depth description of the sample, Section 3.4.1.3 includes variables within this sample, and Section 3.5 describes the data-collection methods used.

This was a single case study (Yin 2018), which focused on the case of children and CTs within four mainstream class levels in the Irish primary school where FS was introduced (Bell 2010; Creswell 2013). Although multiple case studies tend to be considered more robust (Yin 2018), the researcher found it difficult to locate a single suitable sample and could not find additional samples of practising FSLs facilitating FS sessions in an Irish primary school that had no previous experience of the FS approach. As this project was a self-funded PhD study, the researcher did not have access to the financial or personnel required to include multiple cases.

This single case study was embedded in the Irish PSC's vision, aims, principles, broad objectives, subject content objectives, concepts and skill development, and assessment strategies. It focused on the perspectives of children and CTs in this context and occurred under the five rationales identified by Yin (2018), illustrated in Figure 3.7. The researcher was also aware that there may be additional rationales and remained aware of this, as cautioned by Yin (2018).

1. Critical case in testing a theory	2. Extreme or unique case	3. Typical case that captures everyday situation	4. Revelatory case of a phenonmenon previosuly inaccessible	5. Longitudinal case
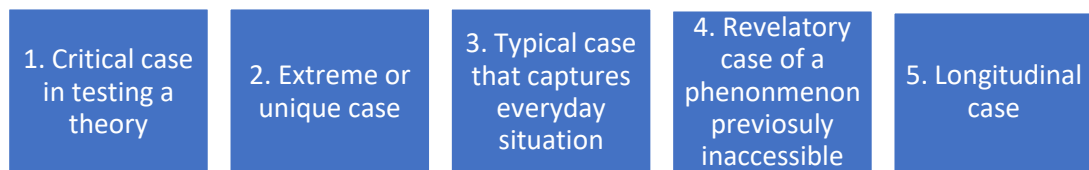
Figure 3.7 The Five Rationales of a Single Case Study (Yin 2018)

The first rationale for a single case study is suitable when research tests well-formulated theory, such as perceived learning and teaching outcomes of the FS approach. As a result, the case study can confirm, challenge, or extend the theory to determine if the propositions of the theory are correct or whether some alternative set of explanations may be more relevant (Yin 2018). The second rationale for the single case study occurs when the case represents an extreme scenario, however, these situations commonly occur in clinical psychology (Yin 2018). Third, a single case study may be representative of a typical case that captures the circumstances and conditions of an everyday or commonplace situation. In addition to this, the fourth rationale, the revelatory case study, occurs when an investigator has the opportunity

to observe and analyse a phenomenon previously inaccessible to social science inquiry. Finally, the fifth is the longitudinal case study, and this occurs when the same single case is studied at two or more points in time.

Case studies may be exploratory, descriptive, or explanatory in nature (Mills et al. 2010; Yin 2018). Exploratory case studies investigate distinct phenomena characterised by a lack of detailed preliminary research, such as the FS approach to learning and teaching in the context of the Irish PSC. A descriptive case study is one that questions a carefully scrutinised phenomenon, and an explanatory case study is employed to explain phenomena (Mills et al. 2010). While each type of case study; exploratory case studies, descriptive case studies and explanatory case studies have their distinctive characteristics, there are also clearly identifiable overlaps among them. The goal is to avoid gross misfits: "that is, when you are planning to use one type of method, but another is really more advantageous" (Yin 2018, p. 8).

In summary, this was a single exploratory case study. The following section will explore the sampling approach adopted in this research.

3.4.1.2 Sampling Approach Adopted

Non-probability sampling was incorporated as a specific sample of children and teachers in an Irish primary school, who had not engaged in the FS approach previously was required to answer the research questions (Blaikie 2010; Cohen et al. 2011; Silverman 2014). Therefore, a "handpicked" case was necessary based on the researcher's judgment of these particular characteristics (Cohen et al. 2011, p. 156). The researcher had access to practising FSLs in a private Facebook group (IFSA Forum 2017) and entered a message on the page in October 2017, as illustrated in Figure 3.8.

Claire Murphy
10 October 2017

Hi All, I hope you are all enjoying this time of year, I love watching autumn take hold! I've been working away on my PhD research which is based on Forest Schools and the Irish Primary School Curriculum. I'm just wondering if anyone in this group is working with a primary school? If you are open to being involved in the research please PM me, or comment here and I'll contact you. Looking forward to the gathering in Galway! 🙂

Figure 3.8 Non-Probability Purposive Sample Selection

Three FSLs contacted the researcher as a result of this Facebook post; the first did not have access to a school, the second was a practising FSL in a primary school but could not practice fire making or use certain tools such as knives and bowsaws due to insurance issues, and the third was a practising FSL who had personal contacts in a primary school who wished to introduce FS. The researcher approached the principal of this school and enquired about the possibility of conducting the research there. This introduction occurred in person, after making an appointment, and an information letter was provided to the Board of Management (BOM) and principal as included in Appendices H.1 and H.2.

3.4.1.3 Variables Within the Sample

Variables within the sample are measurable attributes of things that change (Thomas 2013). This was a "DEIS" school, as introduced previously (Department of Education and Science (DESa) 2005a). This status of DEIS is determined by the socioeconomic variables that collectively best predict education achievement (Department of Education and Skills (DESb) 2019), and as a result, a significant emphasis is placed on providing additional support to vulnerable groups. Children from the Traveller community and children who do not speak English or Gaeilge (Irish) as their first language are identified as at risk of disadvantage in this action plan (DESa 2005a). This school identifies as a "School of Sanctuary", that works on providing a sense of safety (Schools of Sanctuary 2022) a Dublin City University (DCU) "Changemaker School" to reimagine, co-create and lead transformation in education (DCU 2022), a member of the "Green Schools" programme to lead environmental management (An Taisce 2022), and a "Digital School of Distinction" to promote best practice information and communication technology (ICT) in Irish primary schools (Digital Schools of Distinction 2022). The school also prides itself on including many approaches to delivering the Irish PSC, such as cooking, woodwork/construction, and play in the infant classrooms through utilising the Aistear: The learning outcomes of the Early Childhood Curriculum Framework (NCCA 2009a).

One class from each curricular level, as organised in the Irish PSC (NCCA 1999a), was chosen for the purpose of this research. These four class levels were provided with access to FS over two academic terms, as outlined in Figure 3.9, below.

| Term 1 | •Second Class
•Fifth Class |
| Term 2 | •Senior Infants
•Fourth Class |
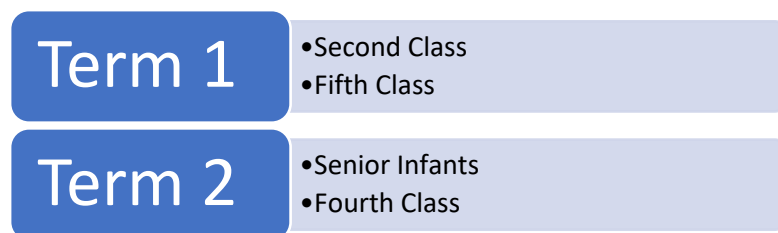
Figure 3.9 Classes Included in The Research

In term one, a second class and a fifth class attended the weekly FS sessions separately, and in term two, a senior infant and a fourth class. Table 3.1 outlines the total sample size included in this case study.

Table 3.1

The Research Study's Sample Size

Class Level	Number of Children in Class	Number of Children with Consent to be Involved in the Research
Senior Infants	23	18
Second Class	18	17
Fourth Class	20	17
Fifth Class	25	16
Total (N=)	84	68

The senior infant children were organised into two separate classes. Sixteen children were enrolled in the base senior infant class. An additional seven children were enrolled in a junior and senior infant multigrade class and attended FS with the single stream senior infant class. This brought the total number of senior infant children to twenty-three, eighteen of whom the researcher received parental consent to observe and interview. There were eighteen children in the second class and twenty in the fourth class, and the researcher had parental consent to observe and interview seventeen children in each setting. Although there were twenty-five children in fifth class, the researcher only obtained parental consent to observe and interview sixteen children. Regardless of consent to be involved in the study, all children attended and

participated in the FS sessions, as would have occurred if the researcher had not been present. In total, sixty-eight semi-structured non-participant observations of children learning during FS were completed (eighteen senior infant children, seventeen second class children, seventeen fourth class children, and sixteen fifth class children) (n= 68), as outlined in Table 3.1. Thirteen children declined assent to be involved in semi-structured journey interviews and, as a result, fifty-five children's perspectives were recorded (n= 55) (sixteen senior infant children, ten second class children, seventeen fourth class children and twelve fifth class children), as outlined in Table 3.2.

Table 3.2

The Research Study's Sample Size at Each Class Level

Class Level	Number of Children with Consent to be Involved in the Research	Number of Children who Provided Assent to be Interviewed
Senior Infants	18	16
Second Class	17	10
Fourth Class	17	17
Fifth Class	16	12
Total (n=)	**68**	**55**

Five CTs participated in the study. The senior infant class was taught by two CTs who shared their job. One CT was male and four CTs were female. The five CTs accepted the invitation to participate in the semi-structured interview process. Information letters and consent forms provided to each CT are included in Appendices H.1 and H.2.

Gender variations across multiple class levels provided an additional variable, which is outlined in Table 3.3.

Table 3.3

The Gender Variations in Each Class Level

Class	Number of Boys	Number of Girls
Senior Infants	10	13
Second Class	10	8
Fourth Class	9	11
Fifth Class	12	13

The school was assigned a DEIS status, previously described, and educational inclusion needs, as outlined in the DEIS Action Plan (DESa 2005a) are noted in Table 3.4 below.

Table 3.4

Educational Inclusion Needs

Class	Total number	Children from the Traveller Community	Children whose first language was not English or Gaeilge (Irish)
Senior Infants	23	11	4
Second Class	18	6	2
Fourth Class	20	4	8
Fifth Class	25	4	12

Information regarding supports for children with special educational needs was requested from each CT, and the supplied form is included in Appendix K.2. Additional special educational needs outlined by the CTs are included in Table 3.5, below. References to specific learning needs detailed in the table below are consistent with those detailed by the National Council for Special Education (NCSE) (2017).

Table 3.5

Children with Special Educational Needs as Identified by Class Teachers

Class	Children
Senior Infants	June is a child with hearing impairment and wears cochlear implants.
Second Class	Amethyst is a child with mobility needs. Clay is a child with attention deficit hyperactive disorder (ADHD).
Fourth Class	Jasmine, Sandy and River are children diagnosed with autism spectrum disorder (ASD). Rose and Sage are children with hearing impairments and wear cochlear implants. Aspen and Daisy are awaiting an assessment.
Fifth Class	Watson is a child with social emotional behavioural difficulties (SEBD), attention deficit hyperactive disorder (ADHD), and specific speech and language disorder (SSLD). Lavender is a child with mobility needs and is a wheelchair user.

The data-collection timeline is detailed in the following section. This includes the number of planned FS sessions and the daily timetable for each class visit. It also outlines any FS sessions that were cancelled or rescheduled.

3.4.1.4 Timeline of the Data-collection

The FS sessions were scheduled throughout the 2018 and 2019 academic year, as outlined in Figure 3.10, below.

Term One — 11th September - 27th November 2018

Term Two — 5th February - 21st May 2019

Figure 3.10 Forest School Term Dates

These FS sessions were organised as ten weekly visits to the forest, and in total there were forty FS sessions planned. However, some FS sessions were cancelled due to school closures, and two incidences when the FSL was ill. This was noted in the

researcher's memo, which is included in Appendix C.2. Excerpts of this memo are included below.

Researcher's Memo

> "Fifth Class's session did not go ahead today as the school closed for a half day. I felt the importance of having ten Forest School sessions planned to allow for days like this."

> (23 Oct 2018)

> "The Forest School Leader is unwell today, further confirmation of the need for ten Forest School sessions to allow for unexpected circumstances."

> (06 Nov 2018)

Planned dates and the reason why some FS sessions were cancelled or rescheduled are outlined in Table 3.6 below.

Table 3.6

Record of Forest School Sessions Scheduled, versus Those Completed

Class	Dates of Forest School Sessions		Forest School Sessions Not Completed and Reason Why
Senior Infants	i.	05 Feb 2019	• 05 Mar 2019 – Forest School Leader unwell and session rescheduled.
	ii.	12 Feb 2019	
	iii.	19 Mar 2019	• 12 Mar 2019- Storm Gareth (completed on school grounds instead)
	iv.	02 Apr 2019	
	v.	09 Apr 2019	
	vi.	30 Apr 2019	• 07 May 2019 rescheduled due to school staff continuing professional development.
	vii.	14 May 2019	
	viii.	21 May 2019	
Second Class	ix.	18 Sep 2018	• 11 Sep 2018- permit not granted in time (completed on school grounds instead)
	x.	25 Sep 2018	
	xi.	02 Oct 2018	
	xii.	09 Oct 2018	• 06 Nov 2018- Forest School Leader unwell
	xiii.	16 Oct 2018	
	xiv.	23 Oct 2018	• 27 Nov 2018- additional catch-up day not noted on permit (completed on school grounds)
	xv.	13 Nov 2018	
	xvi.	20 Nov 2018	

Fourth Class	xvii.	05 Feb 2019	• 05 Mar 2019 – Forest School Leader unwell and session rescheduled.
	xviii.	12 Feb 2019	• 12 Mar 2019- Storm Gareth (completed on school grounds instead)
	xix.	19 Mar 2019	
	xx.	02 Apr 2019	
	xxi.	09 Apr 2019	
	xxii.	30 Apr 2019	• 07 May 2019 rescheduled due to school staff continuing professional development
	xxiii.	14 May 2019	
	xxiv.	21 May 2019	
Fifth Class	xxv.	18 Sep 2018	• 11 Sep 2018- permit not granted in time (completed on school grounds)
	xxvi.	25 Sep 2018	
	xxvii.	02 Oct 2018	
	xxviii.	09 Oct 2018	• 23 Oct 2018- school half day closure, afternoon forest school session cancelled.
	xxix.	16 Oct 2018	
	xxx.	13 Nov 2018	• 06 Nov 2018- Forest School Leader unwell
	xxxi.	20 Nov 2018	
			• 27 Nov 2018- additional catch-up day not noted on permit (completed on school grounds)

Each FS session required two hours of allocated curricular time (NCCA 1999a) per week. This included a thirty minute bus journey to and from the forest (fifteen minutes each way/approximately five kilometres), and one and a half hours of learning and teaching in the forest setting. The time allocated to each FS session is outlined in Table 3.7.

Table 3.7

Forest School Timetable

	Morning Forest School Session	Afternoon Forest School Session
Bus departs School	09:30am	12:00pm
Arrival at Forest	09:45am	12:15pm
Bus departs Forest	11:15am	1:45pm
Arrival at School	11:30am	2:00pm

Section 3.5 will detail the data-collection methods of semi-structured non-participatory observations, semi-structured interviews and journey interviews, which include strategies of pedagogical documentation, stimulated recall and researcher memoing that were incorporated.

3.5 Data-collection Methods Utilised

The data-collection methods used were determined by the research questions and research framework discussed previously in this chapter. Tudge (2016) states that research building on Bronfenbrenner's theory (1979; Bronfenbrenner and Morris 2006) must demonstrate evidence of person-context interactions over time. However, Jaeger (2016) argues research should also acknowledge the role played by a person's characteristics, while simultaneously maintaining a focus on the context and considered time. Thus, data-collection methods, illustrated in Figure 3.11 below, capture how the characteristics of the person during the processes in which learning and teaching occurred were recorded, while a focus on the context and time in which this transpired was maintained.
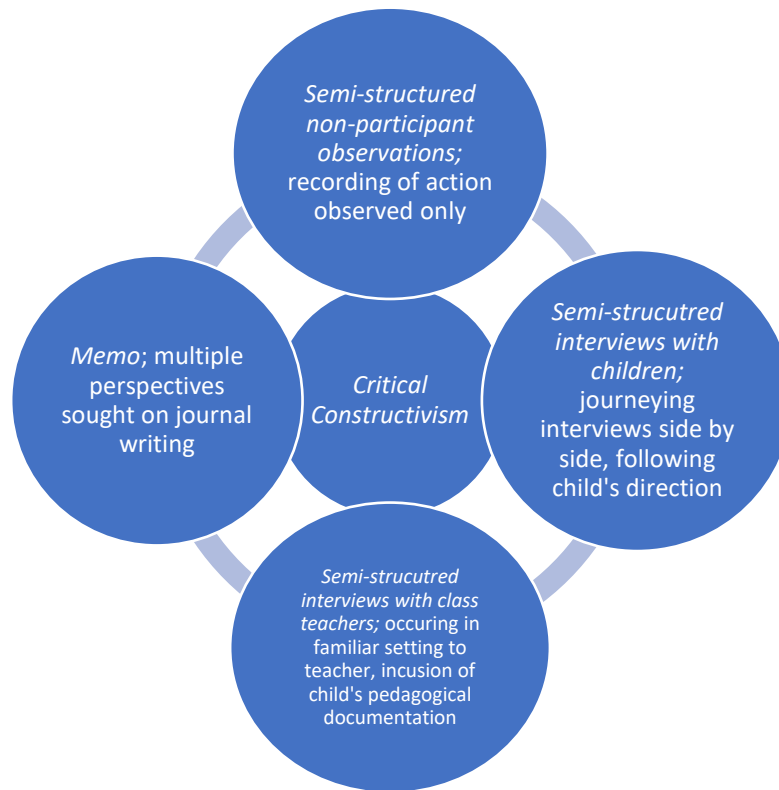
Figure 3.11 Situating the Data-collection Methods Within the Theoretical Perspective of The Research

The information in Figure 3.11 also outlines connections to theoretical perspectives, as discussed in Section 3.3.3 previously. Then first image connects data-collection methods to the paradigms of interpretivism, which places an emphasis on observational and interpretive techniques to understand the social world (Blaikie 2010; Thomas 2013; Galvin 2016), as explored in Section 3.3.3.1. Constructivism argues that this occurs as a person engages with the world they are interpreting (Crotty 1998; Patton 2015; Galvin 2016), which is outlined in Section 3.3.3.2. The second image connects the data-collection methods to the critical constructivism paradigm, which promotes self-analysis and encourages criticality in the research process (Kincheloe 2008), as discussed in Section 3.3.3.2.1. These data-collection methods are explored in further detail later in this section.

In addition to this, Yin's (2018) four principles of data-collection were applied to establish the construct validity and reliability of this case study evidence, as outlined in Figure 3.12, below.

1. • Data-collection methods evolve from the research questions
2. • Creation of a case study database
3. • Creation and maintenance of a chain of evidence
4. • Exercising care when using data from social media sources

Figure 3.12 Yin's (2018) Four Principles of Data-collection

All data-collection methods evolved from the research questions, explored in Section 3.2.1 previously, to provide for converging lines of enquiry and corroboration, as depicted in Figure 3.13. Non-participant semi-structured observations, semi-structured journey interviews, semi-structured interviews incorporating pedagogical documentation and researcher memoing were employed to collect data.
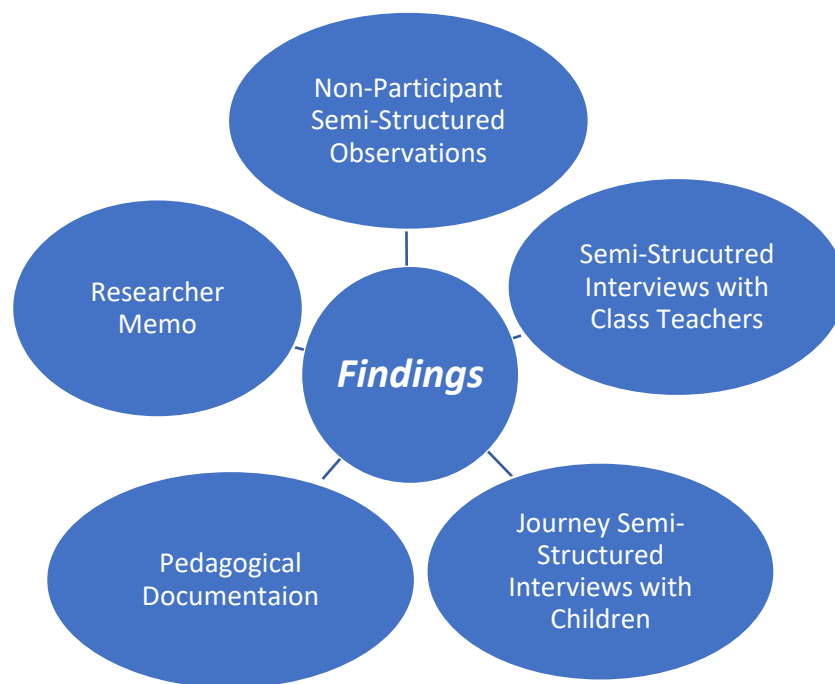
Figure 3.13 Convergence of Multiple Sources of Evidence (adapted from Yin 2018, p. 129)

The sources of the case study evidence listed above are explored in greater detail in the following segments, Sections 3.5.1, 3.5.2, 3.5.3, and 3.5.4, below. The second principle outlined by Yin (2018) is the creation of a case study database. Case study

notes recorded during observations, interviews and excerpts from the researcher's memo were assembled in an orderly fashion and samples are included in Appendices C.1, C.2, D.1, E.2 and F.3. Documents supporting the case study were stored in an annotated bibliography and electronic notes and portable document formats (PDF) were saved in OneNote (Microsoft 2019) where they could be retrieved for later inspection or perusal. Samples of tabular materials, such as the Curricular Subject Objectives Grid (formed from observed data) are included in the appendices, Appendix D.1 in this instance. Narratives produced by the researcher in response to the data were recorded in the researcher's memo, as included in Appendix C.2. Yin's (2018) third principle is concerned with the creation and maintenance of a chain of evidence. No original evidence was omitted, and all data received the appropriate attention in considering the findings. The fourth principle, in relation to exercise of care when using data from social media sources (Yin 2018), was applied to the collection of information derived from sources used to create this study. All literature was sourced from reputable peer-reviewed journal articles or published books, and a comprehensive reference list is provided at the end of this thesis.

Further detailed explorations regarding the maintenance of integral research approaches adopted are included in Section 3.6. Prior to this, the following sections will provide the reader with an outline of the sources of case study evidence gathered in this project.

3.5.1 Semi-Structured Non-Participant Observation

Observational running records, of which a sample is included in Appendix C.1, were used to record comprehensive accounts of activities observed (Boehm and Weinberg 1997; Palaiologou 2019). The observation schedule was developed with reference to the extensive literature reviewed in the previous chapter and maintained a consistent focus on the research questions, outlined previously, to create potential links between the themes that emerged from the data and the methodological and theoretical framework of the study (Patton 2015). This naturalistic approach is in line with Bronfenbrenner's Bio-ecological PPCT Model as direct observations occurred of multi-person systems. Moreover, the observations of the multi-person systems occurred in the context of the FS approach within the

Irish PSC. While all elements of the Irish PSC, to include: underpinning educational theories (as explored in Section 2.7), the introduction, aims, principles, broad objectives, content, concepts, and skills development and assessment (NCCA 1999a; NCCA 2007) informed the basis of the data-collection instruments, the observation schedule was condensed to summarise underpinning educational theories, principles, and specific curricular objectives and skills associated with each subject on the initial running record template. This was then further adapted after the first two FS sessions to ensure that the information was succinct and easily summarised (Wood 2013; Yin 2018). Table 3.8, below, provides an overview of literature underpinning the observation running record.

Table 3.8

The Structure of the Observation Running Record

1.	Focus of Observation	Situated in Educational Theory
1.1	**Children engage in the learning**	Constructivism: Learning is an active process in which learners interact with teachers and each other (Cohen et al. 2004; Schunk 2012; Bonfield and Horgan 2016). Social Constructivism: Learning occurs in a social environment (Cohen et al. 2004; Schunk 2012; Swann 2012)

2.	Focus of Observation	Principles of the Irish Primary School Curriculum (NCCA 1999a) represented
2.1	<u>Active Learning</u> **is observed**	*The child is an active agent in his or her learning.*
2.2	<u>Talk and Discussion</u> **is facilitated**	*Language is central in the learning process.*
2.3	<u>Use of the Environment</u>	*The child's immediate environment provides the context for learning.*

		The child's sense of wonder and natural curiosity is a primary motivating factor in learning.
		Learning should involve guided activity and discovery methods.
2.3	**Collaborative Learning is facilitated**	*Collaborative learning should feature in the learning process.*
		Social and emotional dimensions are important factors in learning.
2.4	**Lower and Higher Order Questioning are used**	*Higher-order thinking and problem-solving skills should be developed.*
2.5	**Opportunities to Reflect and Self-assess are provided**	*Social and emotional dimensions are important factors in learning.*
		Skills that facilitate learning transfer should be promoted.
		Assessment is an integral part of teaching and learning.
2.6	**An Inclusive Learning Environment is evident**	*The range of individual differences should be taken into account in the learning process.*

Observations specifically related to the PSC's subject content objectives were then transcribed onto a curricular grid devised by the researcher. This curricular grid contains a table of the Irish PSC subjects and includes the strands and strand units/elements applicable to each curricular level (NCCA 1999a; 2016). Samples of

completed curricular grids, included in Appendix D.1, note dates in which subject content objectives were observed during the FS sessions.

The Leuven Scale: a five-point assessment model, was tested in the first two weeks of data-collection to record children's level of involvement in learning (Mackinder 2017), however, as "such engagement is not guaranteed" (Delaney 2017, p. 60), actions, rather than interpretations of actions, were recorded. Instead, detailed descriptive information regarding children's participation was included on a simple observational system to minimalise the opportunity for error (Boehm and Weinberg 1997). A checklist was an alternative option; however, it may have influenced the researcher to ignore other important indicators of children's participation (Boehm and Weinberg 1997). Learning instruments, to include Walsh's (2017) Quality Learning Instrument and Gore's (2018) Quality Teaching Model were also initially included, but later removed, as the researcher felt that the PSC vision, aims, principles, broad objectives, subject content objectives, concepts and skill development, and assessment had already formed the basis of the report and this was a repetition, as illustrated in an excerpt from the researcher's memo, below. Moreover, this researcher-created observation schedule was based on the vision, aims, principles, broad objectives, subject content objectives, concepts and skill development, and assessment of the Irish PSC as opposed to a framework derived from non-Irish curricula, as these instruments were based on UK and Australian models.

Researcher's Memo Excerpt

"Designing the Observation Schedule:

The decision to omit Walsh's Quality Learning Instrument was taken because many of these points were already included in the observation schedule from the Primary School Curriculum [principles and subject content objectives] and the Aistear framework themes."

(12 Aug 2018)

As a result, the movement, expression, and dialogue of the child provided the researcher with an element of insight into how learning occurred (Waite and Pratt 2017). The structure of this observational report also allowed the researcher to focus

her attention on individuals and smaller groups. Observations of interactions, outcomes of interactions, the physical setting in which the exchange occurred, and the nature of the tasks involved were noted throughout the FS sessions.

Data were recorded by the researcher without involvement in the FS sessions (Cohen et al. 2000; Creswell 2013). While Spradley (2016) argues that non-participant observations are "at the bottom of the scale" (p. 59) in terms of involvement with people and/or activities in the study compared to other observational techniques, such as participant observations, a previous study conducted by the researcher (Murphy 2018) notes challenges regarding the facilitation of FS sessions while simultaneously recording detailed observations of children's interactions. Moreover, non-participant observations provided the researcher with freedom to move around and capture incidences of active learning. Ethical considerations, explored in Section 3.6.5, did not allow the researcher to maintain anonymity, thus, the researcher visited the four mainstream classes prior to the commencement of the FS sessions to introduce herself and to explain her role as researcher. An explanatory PowerPoint (Microsoft 2021), which is included in Appendix K.1, was presented to the children.

Continuous consideration was held for the research questions and all data were recorded within the structure of the observation report, previously outlined in Table 3.8. All field notes were recorded on site, immediately as they occurred, and in context. This is highly regarded by Spradley (2016), as the researcher did not rely on her memory of occurrences. These notes were then transcribed to Microsoft Word documents (Microsoft 2020), which are included in Appendix C.1. Only details of events observed were recorded which utilised concrete language to avoid the inclusion of any personal assumptions throughout the process (Patton 2015; Spradley 2016). In addition to this, the researcher included a colour-coded key that represented whether the recorded dialogue was spoken by the CT, FSL, a child, or the researcher. A further code was added to decipher any additional persons present during specific observations, namely: "actions observed by the evaluator when they are alone" or "actions observed by the evaluator when others are present". However, the researcher remained aware that certain elements of the child's learning may not

have been observable, including creativity, intelligence, aggression, distractibility, and self-concept (Boehm and Weinberg 1997).

The observations were separated into "grand tour" and "mini tour" statements, as advised by Spradley (2016, p. 77 and p. 79). While the grand tour focused on general observations; the space, actor(s), activity/activities, object(s), act(s), event(s), time, goal(s) and feeling(s), the mini tour dealt with much smaller unit of experiences; the places, acts, events, feelings, objects, times, goals, people, and activities. These two forms of observations are illustrated below in Figure 3.14.

Grand Tour Observations	Mini Tour Observations
• Space • Actor • Activity • Object • Act • Event • Time • Goal • Feeling	• Places • Acts • Events • Feelings • Objects • Times • Goals • People • Activities

Figure 3.14 Grand and Mini Tour Observations (Spradley 2016)

Repeated observations, outlined previously in Table 3.6, provided stable data records. The researcher conducted observations of thirty-one FS sessions, which translated to a duration of forty-six and a half hours in total. This repetition aimed to address the chance of observer bias and observer drift through the examination of consistency of findings across different points of time (Patton 2015). It also aimed to mitigate the potential impact of the Hawthorn Effect; where the alteration of the participant's behaviour occurs due to their awareness of being observed (Boehm and Weinberg 1997; Cohen et al. 2000). This may occur when the participants feel an interest has been taken in them and may result in a change of behaviour, such as a notable increase in enthusiasm, which may produce positive consequences of various kinds (Thomas 2013). These non-participant observations were also supported by

data collected through semi-structured interviews, which are explored in the following section.

3.5.2 Semi-Structured Interviews

Interviews, often applied in case studies, are frequently used in combination with other methods of data-collection and focus on a specific person, situation, or institution (Kvale 2012). Interviews evaluate or assess people, in some respects, test or develop hypotheses, collect data (similar to surveys or experimental situations) and sample respondents' opinions (Cohen et al. 2011; Thomas 2013). In this case study, the purpose of semi-structured interviews was to gather children's and CTs' perspectives regarding the introduction of FS sessions in their Irish primary school. These semi-structured interviews occurred during the final weeks of FS. More specifically, the children's semi-structured interviews occurred during the final two FS sessions in each term and the CTs' semi-structured interviews after the sessions were completed. Power relations between interviewer and interviewee and the space in which they are conducted can have a significant effect on the kinds of data generated (Sin 2003; Jones et al. 2008). However, the process of walking during a journey interview can have the potential to challenge this power imbalance (Sin 2003; Hall et al. 2006). Thus, a journey interview structure was applied to the semi-structured interviews with children. This is discussed in detail in the following Section 3.5.2.2. Semi-structured interviews with CTs occurred in the school setting. The researcher attended the school at a time which suited the CTs to facilitate their participation in the interview. Open-ended semi-structured questions were utilised in both scenarios. These questions were flexible and allowed the interviewer to probe and interrogate concepts in more depth and to clear up misunderstandings (Cohen et al. 2011). It also allowed for unexpected or unanticipated answers (Cohen et al. 2011). Data from both sets of semi-structured interviews were recorded on an Olympus "LS-P1" Dictaphone (Olympus 2016).

Inaccuracies and bias during semi-structured interviews were minimised through careful planning (Alvesson 2011; Cohen et al. 2011; Thomas 2013). These carefully considered questions are introduced to the reader in the following paragraphs.

3.5.2.1 Class Teachers' Semi-Structured Interviews

Similar to Cumming and Nash's (2015) study, CTs were interviewed one week after the FS sessions were completed to focus on relevant elements of these research sub questions:

➢ *How do the class teachers perceive the Forest School sessions?*

➢ *What learning and teaching methodologies, if any, do the class teachers identify as unique to the Forest School approach?*

Initial interview questions sought to uncover the CTs' previous experience of approaches to outdoor education, thus, the researcher asked questions:

"Were you familiar with the Forest School approach before the sessions?

If so, what did you know?"

The participant's perceptions were then asked through the use of questions:

"What did you think of the Forest School sessions?"

This careful framing of the questions (Alvesson 2011) was required to ensure that the researcher did not promote the FS approach in any area of the interview process (Harris 2017). Furthermore, questions that allowed for criticism of the FS learning approach were also incorporated into semi-structured interviews (Miles and Huberman 2019), as outlined below:

"Were there any challenges of implementing Forest School in the primary school?

If so, what were they?"

The script employed and sample excerpts from transcriptions of the CTs' semi-structured interviews are included in Appendix E.2.

The following section will now explore the semi-structured interview approach applied to children's journey interviews.

3.5.2.2 Children's Semi-Structured Journey Interviews

Importance was placed on the inclusion of each child's voice during data-collection; however, the researcher was mindful of the possible inclination of the child to provide an answer s/he felt was correct in order to please the adult (Holmes 2019). Therefore, the researcher had to be flexible in her approach to data-collection (Holmes 2019). As a result, the researcher moved beyond the usual perspective of an interview setting (Mac Naughton 2005) and decided to interview the child in motion, rather than taking them out of their everyday context (Jones et al. 2008). Thus, a walking or journey interview approach was taken to collect the data. The child continues his/her daily routines during a journey interview, while the researcher accompanies him/her and listens and records his/her words (Jones et al. 2008; Cumming and Nash 2015; Lynch 2020). This style of phenomenological walking involved temporal expansion, or a temporary movement through another space (Tilley 2008, cited in Lund 2012; Lynch 2020), and the researcher and the child actively explored the landscape while walking. Moreover, talking while walking can tap into the "non-mechanic framework of the mind and its interconnections with place to recall episodes and meanings buried in the archaeology of knowledge" (Anderson 2004, p. 260) and as a result, underlying meanings in dialogue during walking interviews may occur as sensory embodied experiences are narrated (Edensor 2010; Lynch 2020).

Journey interview processes were explained to the children before the interview and the script employed is included in Appendix F.1. An additional assent form: the agreement of someone who is unable to give legal consent to participate in the activity, to the original consent form previously received from the children's parent(s)/guardian(s) was completed, which is also included in Appendix F.1. This assent form included visual, colour-coded prompts and was read aloud to each child by the researcher, who consistently confirmed the child's understanding. Written or verbal confirmation was obtained from the child and recorded to confirm his/her assent. This assent process is explored in further detail in Section 3.6.5, Ethical Considerations, later in this chapter. Thirteen children declined assent prior to the interviews. Thoughtful consideration was placed on the recording device and, as a result, semi-structured journey interviews were captured on an Olympus "LP10"

Dictaphone (Olympus 2016), instead of visual media, as video footage of the journey interview may have been disruptive and the output unwatchable and disorienting (Jones et al. 2008). The researcher then partook in a walk and/or activities, as led by the child during these journey interviews (Pink 2007; Holmes 2019). These interviews occurred with groups of children in the social circle they were involved in, unless requested otherwise (Cohen et al. 2011; Cumming and Nash 2015).

These semi-structured journey interviews focused on the relevant element of the research question:

➤ *How do the children perceive the Forest School sessions?*

Similar to the CTs' interviews, these semi-structured questions began by seeking previous knowledge of the child's lived experience, as central to the Irish PSC, and asked questions:

"*Had you heard of Forest School before?*" and

"*Had you ever been in a forest before?*"

Connections to key principles of the Irish PSC were maintained throughout further questions regarding elements of child collaboration and assessment, which were included in a child-appropriate manner, as included below:

"*Did you like working in the Oak/Willow groups? Why/ Why not?*",

"*How do you think you did during the whittling/ fire making?*" (Skill making element of the session)*, and*

"*What new things did you learn?*"

The interviewer faced the challenge of ensuring that her own subjectivity and bias did not influence the interview and took specific measures to combat these challenges, which are detailed below in Section 3.6: Research Integrity (Cohen et al. 2011; Alvesson 2011). Again, interview questions inviting critique of the FS approach to learning and teaching were included (Miles and Huberman 2019), and all opinions were welcomed, as outlined below:

"*Was there a time in the forest that you did not enjoy? Why?*"

A sample of completed transcriptions is included in Appendix F.3, and the duration of time spent collecting data is outlined below in Table 3.9.

Table 3.9

The Duration of Time of The Semi-Structured Interviews

Data-collection Method	Research Participant	Duration
Non-participant semi-structured observation	Senior Infant Class	12 hours
Non-participant semi-structured observation	Second Class	12 hours
Non-participant semi-structured observation	Fourth Class	12 hours
Non-participant semi-structured observation	Fifth Class	10 hours 30 minutes
Semi-structured journey interviews	<u>Senior Infant Class</u> *Heath and Bay* *Ivy, Jade, Viola, and Terra* *Marina and Talia* *Spruce and Basil* *Sierra* *Olive* *Vernon and Juniper* *Savannah* *Raine*	<u>34 minutes 43 seconds</u> 3 minutes 37 seconds 7 minutes 17 seconds 3 minutes 30 seconds 2 minutes 45 seconds 3 minutes 45 seconds 3 minutes 18 seconds 6 minutes 0 seconds 2 minutes 35 seconds 2 minutes 36 seconds
Semi-structured journey interviews	<u>Second Class</u> *Huck and Quill* *Amber, Amethyst, Clay and Alder* *Ruby, Clementine and Brooke*	<u>20 minutes 25 seconds</u> 4 minutes 50 seconds 5 minutes 41 seconds 7 minutes 6 seconds 2 minutes 48 seconds

	Jasper	
Semi-structured journey interviews	Fourth Class *Magnolia, Rosemary, Jasmine and Peaches* *Sandy, Rose, Petal, Coral and Flo* *Sparrow, Marjoram and Birk* *Robin* *Aspen, River, Cedar and Sage*	29 minutes 15 seconds 5 minutes 25 seconds 8 minutes 37 seconds 6 minutes 4 seconds 2 minutes 56 seconds 6 minutes 13 seconds
Semi-structured journey interviews	Fifth Class *Lily and Saffron* *Elm and Dill* *Oleander and Rocky* *Holly* *Fern and Primrose* *Cliff, Birdie and Fleur*	29 minutes 39 seconds 6 minutes 6 seconds 4 minutes 7 seconds 5 minutes 25 seconds 3 minutes 28 seconds 2 minutes 59 seconds 7 minutes 34 seconds
Semi-structured interview	Heather, Senior Infant Class Teacher 1	44 minutes 17 seconds
Semi-structured interview	Dandelion, Senior Infant Class Teacher 2	16 minutes 26 seconds
Semi-structured interview	Poppy, Second Class Teacher	26 minutes 15 seconds
Semi-structured interview	Snowdrop, Fourth Class Teacher	40 minutes 44 seconds
Semi-structured interview	Foxglove, Fifth Class Teacher	32 minutes 15 seconds

The researcher also endeavoured to locate the voice of the child during the CTs' semi-structured interviews by including pedagogical documentation and incorporating stimulated recall, as explored in the following section.

3.5.3 Pedagogical Documentation and Stimulated Recall

Pedagogical documentation is material that demonstrates a record of what the children said and did, the work of the children, and how the pedagogue relates to the children and his/her work (Dahlberg et al. 1999; Olsson 2009). The pedagogical documentation in this study included handwritten notes, drawings, and photographs taken by the children and the researcher during the FS sessions. A variety of writing equipment, to include coloured paper and card of different sizes, markers, large and standard grip pencils, erasers, glue sticks, sticky tape, scissors, and gel pens, as photographed below in Figure 3.15, and an Instax "Mini 9" Polaroid camera (Fujifilm 2017) were placed in a clear plastic box at the centre of the FS camp. The children were encouraged to draw pictures or write notes based on their perceptions of FS. They were then invited to place their documentation in the opaque black and grey box. Envelopes were also provided for additional confidentiality. Photographs of the process of learning and teaching were captured in a discrete manner by the researcher using a Nikon DSLR "D3000" camera (Nikon 2009) during the FS sessions. The children's pedagogical documentation was then displayed during the semi-structured interviews with the CTs to enhance the discourse of meaning-making (Dahlberg et al. 1999; Olsson 2009). Stimulated recall was employed during CTs' semi-structured interviews as a result, and the utilisation of pedagogical documentation was incorporated as a stimulus to reflect on learning and teaching in the FS sessions.

Figure 3.15 Writing Equipment

Data collected in non-participant semi-structured observations and semi-structured interviews were further supported by information recorded in the researcher memo, as discussed below.

3.5.4 Memoing

The researcher's thoughts were captured in the researcher memo, and encouraged connections and comparisons while also helping the researcher form initial questions and research directions to pursue (Charmaz 2014). The researcher also recorded insights obtained from the interviews, including changed understandings of previous experiences, as well as reflections on the research process in a fieldwork journal (Kvale 2012; Spradley 2016). This memo formed an important part of self-conscious reflection on the data (Cohen et al. 2011). It also provided a mechanism for the researcher to begin to analyse the ideas for coding of data, as discussed in Section 3.7, later in this chapter. Excerpts from this memo are included in Appendix C.2.

The following section will guide the reader through the processes of reflexivity, objectivity, dependability, validity, credibility, reliability, transferability, and ethical considerations that were used to ensure that the integrity of the investigation remained throughout this case study.

3.6 Research Integrity

Research integrity ensures that research studies are performed to the highest standard of professionalism and rigour (Irish Universities Association (IUA) 2019). The researcher undertook Epigeum's Research Integrity (Epigeum 2018) CPD, provided by Mary Immaculate College (MIC), Limerick, in September 2018. Additional, and optional content areas of Human Subjects' Protection and Conflicts of Interest were also completed.

This study was designed, undertaken, and analysed in a well-considered manner and results are reported in a way that can be verified and replicated (All European Academics (ALLEA) 2017). In addition to this, concerns regarding researcher bias were applied throughout the study to certify that data-collection and analysis procedures were robust. Initial elements of research integrity were introduced in previous chapters and sections of this chapter. Positionality in this study is central to the data-collection and interpretation due to the active role of the researcher in these processes (Thomas 2013; Woodwell 2014). Such examples include a declaration of the researcher's primary school teaching and FS Leadership qualifications, which were disclosed in Chapter One (Creswell 2013; Silverman, 2014). This teaching experience combined with an insight into the FS approach facilitated the ability to create suitable research questions, described in Section 3.2, and possibly enhanced the CT interviewer/ interviewee relationship. Potential researcher effects, such as the Hawthorn Effect and leading questions have also been acknowledged and addressed previously, as the researcher was aware of the possibility for such impacts to pose a threat to research integrity (Thomas 2013). While a conscious effort was made to address the impact of bias throughout all elements of this report, the following sections will detail systematic procedures which were adhered to ensure research integrity was maintained throughout the entire data-collection and analysis process.

Research integrity in qualitative data studies may be challenging to address as "reliability", and "validity" are terms that belong to the positivistic paradigm (Patton 2015). Therefore, Miles and Huberman (2019) suggest the use of alternative terms, such as "objectivity", "dependability", "credibility" and "transferability" (pp.

278- 279) which are more suited to reflect the interpretive paradigm. Thus, the following sections explore the manner in which research integrity was maintained through reflexivity and objectivity, dependability, validity and credibility, reliability and transferability, and ethical considerations of the study as the researcher endeavoured to maintain a robust and rigorous approach, which is summarised in Table 3.10, below (Patton 2015; Miles and Huberman 2019).

Table 3.10

Methods Adopted to Establish Research Integrity

Methods Adopted in Establishing Research Integrity	
Reflexivity and Objectivity	✓ Self-questioning and self-understanding through the process of memoing ✓ Rich description of research context, research participants, and the process of data-collection and analysis ✓ Rival explanations and conclusions are considered throughout the data-collection and analysis
Dependability	✓ Detailed chain of evidence and audit trail ✓ Clear research questions employed ✓ Consistent study over the course of one academic year
Validity and Credibility	✓ Triangulation of complementary data methods ✓ Low-inference observations and clarification during questioning and member checking ✓ Findings compared to similar studies ✓ Detailed chain of evidence and creation of case study database
Reliability and Transferability	✓ Self-disclosure of thoughts in the researcher's memo ✓ Detailed description of characteristics of the sample is included ✓ Limitations of the sample selection and context are disclosed

The following sections will now describe how each of these methods: reflexivity and objectivity, dependability, validity and credibility, reliability and transferability, and ethical considerations were addressed in detail.

3.6.1 Reflexivity and Objectivity

Reflexivity recognises the values, biases, and assumptions that are reflected throughout the research process and stands for conscious and consistent efforts to view the subject matter from different angles (Alvesson 2011; Willig 2013; Yin 2018). It involves more than simple self-consciousness, and instead is an "active monitoring of the ongoing flow of social life" (Blaikie 2010, p. 53). Thus, reflexivity involves self-understanding and self-questioning in order to declare thy own self in the research, so the process can become a focus of enquiry that is credible and lacks bias (Cohen et al. 2011; Willig 2013; Patton 2015). Qualitative research acknowledges that the researcher influences and shapes the research process, both as a person (personal reflexivity), and as a theorist and thinker (epistemological reflexivity) (Willig 2013). Researchers are not neutral in the research process and they bring their own biographies to the situation, as they are in and of this social world (Cohen et al. 2011). Thus, the researcher remained conscious of the cultural, political, social, linguistic, and ideological origins of her own perspective and reflected on this throughout the report (Blaikie 2010; Cohen et al. 2011; Willig 2013; Patton 2015). Reflexivity also encourages the researcher to reflect on the ways in which he/she may influence the research and its findings (Willig 2013). Highly reflective researchers are acutely aware of the ways in which selectivity, perception, background, deductive processes, and paradigms shape their research (Cohen et al. 2011). As participants behave in particular ways in the presence of the researcher, reflexivity requires constant monitoring of interactions. Furthermore, reflexivity invites the researcher to think about his/her own reactions to the research context and makes possible certain insights and understandings of the data (Blaikie 2010). Thus, the researcher remained aware her own reactions, roles and biases and continuously asked reflective questions, as outlined in Figure 3.16, below.
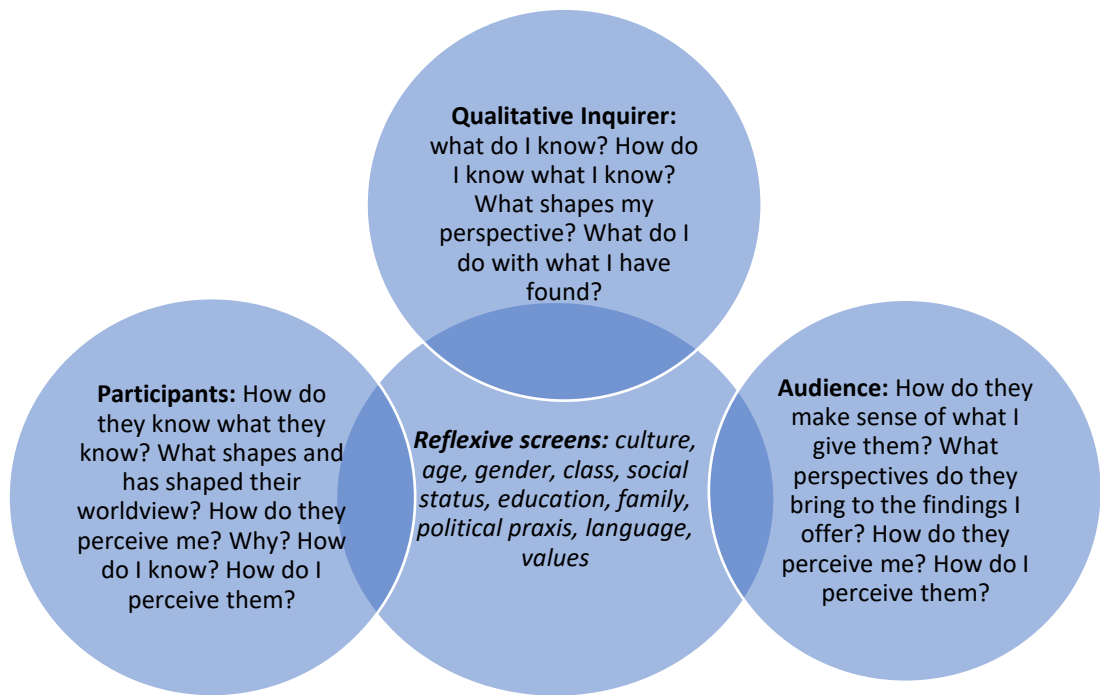
Figure 3.16 Reflective Questions (adapted from Patton 2015, p.66)

Examples of continuous questioning are evident in the researcher's memo, as included in Appendix C.2, and outlined below. Here, the researcher sought to understand the alternative reasoning behind the addition of extra children to the senior infant grouping.

Researcher's Memo Excerpt

> "The seven additional senior infants were added to the group.
>
> This shows a lack of understanding of the Forest School ethos. I had informed the teachers that the quality will be affected by the large numbers.
>
> Is it a case of a class teacher under pressure to please others?
>
> Or a sign of how eager the school is to get as many children as possible to engage in the Forest School sessions?
>
> I wonder how many adults will be able to attend the forest with the class?"
>
> (29 Jan 2019)

Another example of this search for meaning is evident in a second excerpt from the researcher's memo. Here, the history of Celtic traditions are reflected upon alongside concerns regarding sustainability during FS practices.

"Yesterday was St Bridget's Day. I also learned that it was the feast of 'Imbloc' from the Celtic pagan calendar.

I had a discussion with my husband about how we never learned the origin of many Catholic celebrations during our school years. 'Imbloc' was not included in our learning during themes of The Celts. Was this due to the fact that our schools were of Catholic ethos? I feel out of touch with our cultural heritage. I have learned about many of these celebrations from Bluebell- to include 'Samhain' also. These Celtic traditions seem much more suited to our weather and climate in Ireland.

Looking back at traditions, I also look forward to sustainability. I question the teaching of fire-making in Forest School. If Forest School is concerned with 'Leave no Trace' and the impact of man on nature- is the tradition of the campfire suitable for use in Forest School? Should we be introducing solar-powered heating during the sessions to create less of an impact? Fire is the one element with which I feel we are leaving our mark. The smell is evident and the impact of the heat on the ground- even in a 'Leave no Trace' fire. I asked the Forest School Leader about this; she said that it is important that we use non-treated timber in our fires and that this type of fire produces the least amount of carbon dioxide."

(02 Feb 2019)

Rich description, thoughtful sequencing, and contextual clarity were consistently applied throughout the study to engage the reader. This voice invites the reader to join the inquirer in their search for meaning (Patton 2015).

Objectivity is the conscious effort made to remove any researcher biases from the study (Miles and Huberman 2019), therefore, the research methods and procedures of the study are described in a detailed chain of evidence (Yin 2018). Dates and timing of data-collection are outlined in Tables 3.6 and 3.9, and the sequence of data collected is evident through the audit trail documentation included in the appendices (Yin 2018). In addition to this, writings containing alternative perspectives are included throughout the literature review chapter. The researcher considered rival conclusions (Yin 2018) throughout the data-collection, which is evident in memo entries also, one such example is included in the excerpt below.

"I began to consider Forest School like a delicate autumn leaf- full of knowledge, but so delicate. It provides a 'hygge' feeling, but it will crumble under too much pressure [attainment, class numbers, accountability, needs; emotional, behavioural, and additional, expectations; of parents, class teachers]. I am unsure if it can hold the content of our curriculum without losing the ethos at the heart of Forest School.

However, I felt like I observed a high standard of outdoor education from a Forest School Leader who brings her passion to the school."

(05 Feb 2019)

The following section will now outline procedures applied to ensure the dependability of this study.

3.6.2 Dependability

Dependability is concerned that the quality of the study is trustworthy and reliable (Miles and Huberman 2019). The research questions were clear and determined the research approach, as outlined in Section 3.2.1. Data were collected across a longitude of time and from a range of respondents, as suggested by the literature that prompted these research questions. The study was consistent and reasonably stable over the course of one academic year, as outlined in Section 3.4.1.4. Timings and reasons for absences in data-collection are outlined in Table 3.6. Samples of field notes and interview transcriptions are included in Appendices C.1, E.2 and F.3. The researcher's role was explicitly described to the children by the researcher during a visit to the school, as acknowledged previously, and the PowerPoint (Microsoft 2021) presentations utilised are included in Appendix K.1. Data collected were triangulated to demonstrate meaningful parallelism, and coding checks were made to determine adequate agreement, which are described in greater detail in Section 3.7.

3.6.3 Validity and Credibility

Validity ensures that data collected are best suited to answer the underlying research question(s) (Woodwell 2014) and that the new knowledge created is soundly based (Walliman 2018). Therefore, validity was considered during both the

research design process and throughout the data-analysis stage, as depicted in Figure 3.17.
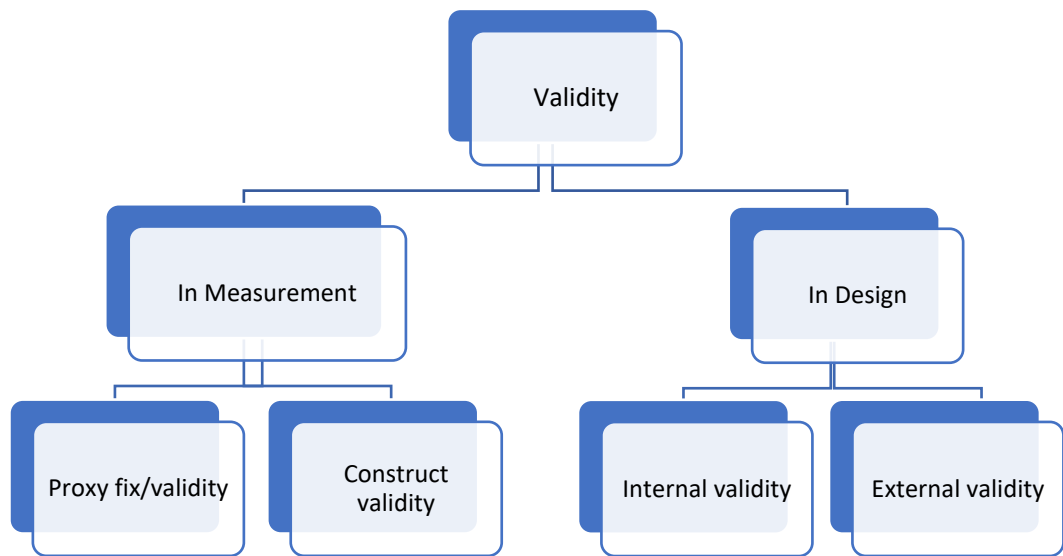
Figure 3.17 Considering Validity Throughout the Study (Woodwell 2014, p. 96)

Validity, similar to reliability, is a concept imported from psychometrics and experimental design (Thomas 2013). Therefore, while validity is important in certain kinds of research, it should not "derail" (Thomas 2013, p. 139) the researcher from the research progress. Instead, the research should reflect the situation in the real world and possess both internal and external validity (Walliman 2018). The accuracy of the study's findings was verified by employing certain procedures to ensure validity (Creswell 2009; Yin 2018). Construct, internal, external validity, and reliability were measured through the use of four tests, as outlined by Yin (2018, p.43), which are included in Table 3.11, below.

Table 3.11

Ensuring Validity

Tests	Case Study Tactic	Phase of Case Study Research in which Tactic was Addressed
Construct validity	➢ Use multiple sources of evidence: observations and interviews ➢ Have key informants review the draft case study report	✓ Data-collection ✓ Research Design
Internal validity	➢ Pattern-matching ➢ Explanation building ➢ Address rival explanations ➢ Use logic models	✓ Research Design ✓ Data-analysis
External validity	➢ Use of theory	✓ Research Design ✓ Data-analysis
Reliability	➢ Use of case study protocol ➢ Development of case study database ➢ Maintenance of a chain of evidence	✓ Data-collection

Construct validity ensured that the correct operational measures captured the data it sought to gather (Yin 2018; Thomas 2013). It also ensured that subjective judgements were avoided while collecting the data. The researcher endeavoured to ensure concurrent validity through the inclusion of multiple sources of data to answer the research questions (Cohen et al. 2011; Silverman 2014). Key informants,

namely: the research supervisors, MIC panel progression members, fellow conference presenters and attendees, and critical friends provided invaluable insight and questioning throughout the research process (Mat Noor and Shafee 2020).

Internal validity refers to the quality of the actual research process (Woodwell 2014). It is the extent to which findings about cause and effect are supported by the study (Walliman 2018). A study is considered to have good internal validity if it is constructed in a way that manages to eliminate all threats to the conclusions being taken seriously (Thomas 2013). While Yin's (2018) test for internal validity and causal claims is inapplicable in the exploratory case study, the researcher endeavoured to ensure inferences were accurate through the use of additional questioning to clarify any uncertainties, as detailed in Section 3.5.2. In addition to this, consistent member checking occurred throughout and after data collection. The researcher sought clarification during interviews and CTs were provided with copies of the interview transcripts (Doyle 2007). Furthermore, observed data was gathered in a systematic manner, as outlined in Section 3.5.1 to strive for low-inference descriptors (Silverman 2014).

External validity is the extent to which findings can be generalised to populations or other settings, and it can be a major barrier in case studies (Woodwell 2014; Walliman 2018; Yin 2018). Thus, the findings of this research were compared with similar studies conducted outside of Ireland to incorporate a replication logic in the result (Silverman 2014). This is explored in-depth in Chapter Five.

The goal of reliability is to minimalise errors and biases in a study and the objective is to certify that if the same case study was conducted again, similar findings and conclusions would occur. This case study was documented to a high standard, and all data were stored in a case study database, as included in the appendices. A chain of evidence was collected, in which the researcher noted the time and place of information gathered, as outlined previously, to confirm data were context-specific (Yin 2018). In addition to this, validity in measurements, as illustrated in Figure 3.17, ensures data-collection and analysis are correct and completed in a convincing way to guarantee minimal dispute as to whether a variable's values represent what is being measured (Woodwell 2014).

A credible study makes sense and provides the reader with an authentic story of the research (Miles and Huberman 2019). There are four types of understanding that may emerge from a qualitative study (Miles and Huberman 2019), as illustrated in Figure 3.18.

Descriptive Understandings	Interpretive Understandings	Theoretical Understandings	Evaluative Understandings
• Outline what happened in a specific situation	• Note what the study meant to the people involved	• Use concepts and their relationships to explain action and meanings	• Judgements of the worth or value of actions and meanings

Figure 3.18 Four Types of Qualitative Study Understanding (adapted from Miles and Huberman 2019)

This study provides the reader with interpretive understandings of the research questions through the triangulation of complementary data methods to include semi-structured observations, semi-structured interviews, and researcher memoing. In addition to this, a balance of perspectives is also included through the use of rival explanations (Yin 2018), which are explored in-depth later in Section 3.7.2.3.

3.6.4 Reliability and Transferability

Reliability ensures that another study using the research instruments and asking the same factual questions would result in the same or similar responses (Thomas 2013; Silverman 2014). It is "the extent to which a test or procedure produces similar results under constant conditions on all occasions" (Bell 2010, p. 119). However, this generalisation is a challenge of the case study as the uniqueness of the situation may be inconsistent with other case studies or unable to demonstrate this positivist view of reliability (Cohen et al. 2011; Yin 2018).

To achieve all transparency, the researcher self-disclosed thoughts throughout the data-collection in the Researcher Memo which is included in Appendix C.2. Excerpts from this memo were included in the data-analysis and are discussed in the following chapter. Characteristics of the sample are described fully in Section 3.4.1 to allow comparisons with other studies. In addition to this, limiting effects of the sample selection and the context of this research are explored in-depth

in Section 3.4.1.3. These include the amount of time spent in the forest, the Irish PSC class levels included in the study, number of children in each class, and the distance of the forest from the school.

3.6.5 Ethical Considerations

Working with human participants always raises ethical issues, thus, high standards of professional conduct are required during the entire research process (Thomas and Hodges 2010; Walliman 2018). The basic tenet of ethical research is to preserve and protect the human dignity and rights of all participants before, during, and after the research project (Willig 2013; Walliman 2018). Researchers should always protect participants from harm or loss and aim to preserve their psychological well-being and dignity (Sieber and Tolich 2013; Willig 2013; British Educational Research Association (BERA) 2018; Walliman 2018; Yin 2018). There is a responsibility to ensure research projects are designed and conducted safely, fairly and with integrity (Thomas and Hodges 2010). This involves recognising risks and avoiding the making of revelations that could be harmful to the reputation, dignity, or privacy of the participants (Sieber and Tolich 2013; Walliman 2018). Qualitative research is "saturated" (Willig 2013, p. 26) with ethical issues, as human interaction affects the researcher and the participants, and the knowledge produced affects our understanding of the human condition (Thomas and Hodges 2010; Willig 2013). Ethical issues arise from the very beginning of the research process for this reason (Willig 2013).

According to the 2012 Department of Children and Youth Affairs (DCYA) guidelines, there are basic ethical principles that apply to all research, as outlined in Figure 3.19, below (DCYA 2012, p.1).

1.

A commitment to the well-being, protection and safety of participants

2.

A duty to respect the rights and wishes of those involved

3.

An obligation to address the issue of who ought to receive the benefits of research and bear its burdens

4.

A responsibility to conduct high-quality scientific research

5.

A commitment to communicate the results of research to relevant stakeholders and policy-makers

Figure 3.19 Basic Ethical Principles That Apply to All Research (Department of Children and Youth Affairs 2012, p.1)

Based on these principles, there are a number of core ethical concepts that arise in research which are addressed in the following sections. These include minimising risk of harm, informed consent and assent, confidentiality and anonymity, child protection principles, legal obligations, and policy commitments in relation to children and a child-centred, inclusive approach.

3.6.5.1 Minimising Risk of Harm

The researcher should endeavour to minimalise any risk which a research project may pose to the welfare of the participants (Thomas and Hodges 2010). Risk refers to situations where there is a high chance that there will be significant harm (Sieber and Tolich 2013). Moreover, risk can be viewed in two parts; the degree of harm which may occur and the probability that it will occur (Sieber and Tolich 2013).

Therefore, Rid et al. (2010, cited in Sieber and Tolich 2013) suggest the use of four steps to assess risk as outlined in Figure 3.20.
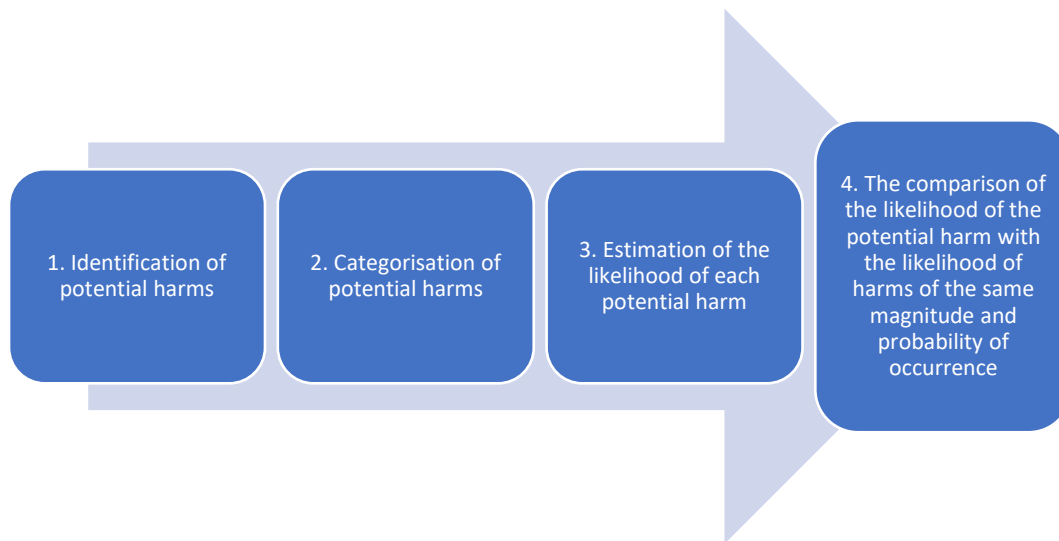
Figure 3.20 Four Steps to Assess Risk (adapted from Rid et al. 2010, cited in Sieber and Tolich 2013)

The children (participants) in this study attended their school setting and the FS sessions were delivered by a qualified and experienced FSL, as per standard practice. There were no alterations or adaptations to the child's school day for the delivery of the sessions, other than attending the forest. This level of harm was compared to "minimal risk activities" according to Rid et al.'s (2010) model (cited in Sieber and Tolich 2013, p.22). All children were provided with the opportunity to participate in FS sessions with their class, regardless of their participation in the research project. There were no financial costs for the parent(s)/guardian(s) of the child to attend these sessions. Thus, benefits of the research outweighed the potential harm to the children (Sieber and Tolich 2013).

The FSL conducted an initial site safety check prior to the commencement of the FS sessions. This was recorded in the researcher's memo in June 2018.

Researcher's Memo Excerpt

"I also spent the morning visiting the site with the Forest School Leader. She seemed quite knowledgeable about site safety considerations. She

completed a thorough site inspection and had further plans to return before the sessions began. She checked the boundaries and slopes and found a suitable place to hang the tarp. The Forest School Leader had concerns about the large boulder rocks, she said that she would not hang any swings near these as she had learned of the dangers at a recent continuing professional development course."

(21 Jun 2018)

A risk management and safety statement plan was submitted to the National Parks and Wildlife Service[13] (NPWS) in an application seeking permission to use lands that are an area of special conservation (NPWS 2021), as noted in the researcher's memo in Appendix C.2. Furthermore, the FSL conducted a structured site risk assessment before each session, which is consistent with good FS practice (IFSA 2019). This risk assessment included an evaluation of site safety and forecasted weather conditions. As a result of this process, four FS sessions were rescheduled due to inclement weather concerns, as noted in Table 3.6.

3.6.5.2 Informed Consent and Assent

Parent(s)/guardian(s) of the children received written information regarding the overall purpose of the research and main features of the study's design, as well as possible risks and benefits to participants (Thomas and Hodges 2010; Sieber and Tolich 2013; BERA 2018). The parent(s)/guardian(s) were provided with the researcher and the researcher's supervisors' contact details and were encouraged to ask questions regarding the study. In addition to this, the parent(s)/guardian(s) of the children were urged to seek further verbal information from the CTs, principal and/or researcher, should there be any reason in which they could not access information in the letter. They then completed an opt-in consent form. Consent that was unclear, for example an unmarked tick box, was considered a "no", or "does not have

---

[13] The National Parks and Wildlife Service (NPWS) oversees policy and management of national parks and reserves, nature services strategy and finance and regional operational procedures (including enforcement and health and safety), The Wildlife Acts and EU Directive transposition, NATURA Policy, Licensing provisions under the Wildlife Acts, Modernisation of property management, Policy on residential properties in national parks and the Departments Development Applications Unit, Peatland Policy, Turf compensation and relocation schemes, Land Designation, Land restoration/cross compliance, Scientific Support, Biodiversity policy and international issues, CITES and exotic species, Agri-Environment policy and schemes, Marine and aquaculture issues, Education Service and Data management.

consent". A copy of the letter of information and the consent form are included in Appendices I.1, I.2, and I.3.

In addition to this, the children also received age-appropriate verbal information from the researcher in the presence of the CT which was pitched to their class level. The researcher continuously questioned the children's understanding (Thomas and Hodges 2010; Sieber and Tolich 2013; BERA 2018) during the delivery of a PowerPoint presentation (Microsoft 2021), included in Appendix K.1. Each child also received written information regarding the study and was provided with the option to complete an opt-in assent form, as discussed previously in Sections 3.4.1.3 and 3.5.2.2. The children were made aware that their involvement was entirely voluntary, and they were free to withdraw at any time without any negative consequences attached to this decision (Thomas and Hodges 2010; Sieber and Tolich 2013; BERA 2018). A child's "no" decision regarding his/her assent in the research prevailed over the parent/guardian's "yes" consent. A parent/guardian's "no" decision regarding their child's involvement in the study prevailed over the child's "yes" assent. Copies of the children's letter of information and consent forms are included in Appendices J.1, J.2 and J.3. Furthermore, the children also completed an additional assent form prior to the semi-structured interviews, which are included in Appendix F.1 (Sieber and Tolich 2013). The researcher read this form aloud to the children. In cases where the child was unable to comprehend the written word, assent was verbally recorded on an Olympus "LS-P1" Dictaphone (Olympus 2016), as stated earlier in Section 3.5.2.2. Thirteen children opted out of the semi-structured interviews at this stage.

The BOM, principal, and CTs also received a letter and information sheet regarding the study, which are included in Appendices H.1 and H.2. The principal and CTs completed opt-in consent forms and were informed that their participation was entirely voluntary, and they could withdraw from the study at any stage without consequence.

3.6.5.3 Confidentiality and Anonymity

Only data required for the purpose of this study were gathered, as outlined previously. Data were stored on password-protected software and hard-copy data

162

were securely locked in a filing cabinet (Sieber and Tolich 2013; BERA 2018). The researcher was the only person who had access to the data, which will be destroyed in seven years, as disclosed to all participants. According to the DCYA (2012), the principles of anonymity state that participants should not be identifiable in the research documentation. Therefore, the location of the study and the school were not disclosed, and pseudonyms were assigned to all participants (Bell 2010; Sieber and Tolich 2013). The General Data Protection Regulation (GDPR) came into force on 25 May 2018 and core principles of data-collection were adhered to, as illustrated in Figure 3.21.

1. Collect no more data than is necessary from an individual for the purpose for which it will be used	2. Obtain personal data fairly from the individual by giving them notice of the collection and its specific purpose
3. Retain the data for no longer than is necessary for that specified purpose	4. Keep data safe and secure and provide an individual with a copy of his or her personal data if they request it

Figure 3.21 Core Principles of Data-collection (Data Protection Commission 2018)

Additional issues related to children's participation in research include child protection principles, legal obligations and policy commitment, and the inclusion of a child-centred approach to research. The following sections explore the approach taken to address each of these concerns in further detail.

3.6.5.4 Child Protection Principles

Researchers must carry out their work in accordance with Children First: National Guidance for the Protection and Welfare of Children (Department of Children and Youth Affairs (DCYA) 2017). As of 10 March 2018, all individuals working with children are required to complete TUSLA, The Child and Family Agency's [14]

---

[14] TUSLA, The Child and Family Agency is the dedicated State agency responsible for improving wellbeing and outcomes for children in Ireland. It represents the most comprehensive reform of child protection, early intervention and family support services.

Children First E-Learning Programme[15] (TUSLA 2021). A certificate to confirm the researcher's completion of this programme was submitted to MIREC with the research application for ethical approval. The school's Child Protection and Safeguarding Policy[16] (DESb 2017) required each member of staff working with children in the school (including the FSL) to hold a valid Garda (Police) Vetting certificate[17] and the aforementioned Children First certificate. Individuals involved directly and indirectly in this research (CT, FSL, Special Education Teachers (SET), Special Needs Assistants (SNA) and the researcher) held Garda Vetting and Children First certificates. All personnel were aware that while the school principal was the Designated Liaison Person[18] (DLP), and the deputy principal was the Deputy DLP (DCYA 2017), each person was also considered a Mandated Person[19] and were legally obligated to report harm of children and assist TUSLA with assessing concerns, if required (TUSLA 2021). The researcher's certificates are included in Appendices L.1 and M.1.

The semi-structured interviews were conducted with groups of children; however, on two separate occasions, two children requested to be interviewed on their own. All interviews occurred in the FS setting where passive surveillance by third parties was present. The researcher was aware that should a child disclose he/she or others are at risk of significant harm, s/he would be told, as per Children First national guidance, that confidentiality may not be guaranteed, but every step would be taken to protect him/her (DCYA 2017). All observations took place in an

---

[15] This open-access, free, e-learning programme has been designed to support people of all backgrounds and experience in recognising concerns about children and reporting such concerns if they arise.

[16] School management authorities are required to complete this policy to provide clear direction and guidance to school personnel in relation to meeting the statutory obligations under the Children First Act, 2015 and in the continued implementation within the school setting of the best practice guidance set out in the updated Children First: National Guidance for the Protection and Welfare of Children 2017.

[17] Provides a vetting disclosure from the National Vetting Bureau outlining the particulars of a criminal record (if any) relating to the person being vetted.

[18] The school DLP has responsibility for ensuring that the standard reporting procedure is followed, so that suspected child protection concerns are referred promptly to the designated person in TUSLA the Child and Family Agency or in the event of an emergency and the unavailability of TUSLA, to An Garda Síochána (Police) (DES 2017)

[19] Mandated persons are people who have contact with children and/or families who, by virtue of their qualifications, training and experience, are in a key position to help protect children from harm.

open area where the researcher was always in sight of others (adults and children). The researcher was aware, that had there been an indication a child's safety or well-being was being negatively affected during the research process, the research would have been suspended until the issue was addressed, fortunately this did not occur.

3.6.5.5 Legal Obligations and Policy Commitments in Relation to Children

The United Nations Convention on the Rights of the Child (United Nations (UN) 2010) provides for free expression for children who are capable of forming their own views and the right to access appropriate information. According to the convention, young people have the right to dignity, privacy, bodily integrity, and a right to autonomy or self-determination. The participants in this research study and their parent(s)/guardian(s) also have prescribed rights, such as anonymity and appropriate storage of personal data under the Data Protection Act (2018).

The National Strategy on Children and Young People's Participation in Decision Making (DCYA 2015) highlights that children have a right to participate in decisions that affect their lives. Each child ought to have a voice that is heard in decisions which may affect his/her health and well-being. Children's voices must be included in school-based decision making. The following section highlights how the researcher ensured that an appropriate environment was created to support the inclusion of the child's voice in the research.

3.6.5.6 A Child-Centred, Inclusive Approach to Research

Successful participation of children in research is associated with their understanding of the process. This includes the involvement of children in decisions. Researchers have a responsibility to ensure participants can partake successfully in the study by providing adequate assistance, which includes an appropriate methodological design (DCYA 2012; 2015). It also involves the inclusion of children, when appropriate, in key decision-making aspects, including ethical issues and the interpretation of results (DCYA 2012; 2015). The researcher incorporated Lundy's Model of Participation (DCYA 2015) to guarantee that the research was grounded in a rights-based approach to involving children in the study, as illustrated in Figure 3.22. This model provides a way of conceptualising Article Twelve of the United Nations Convention on the Rights of the Child (UN 2010).
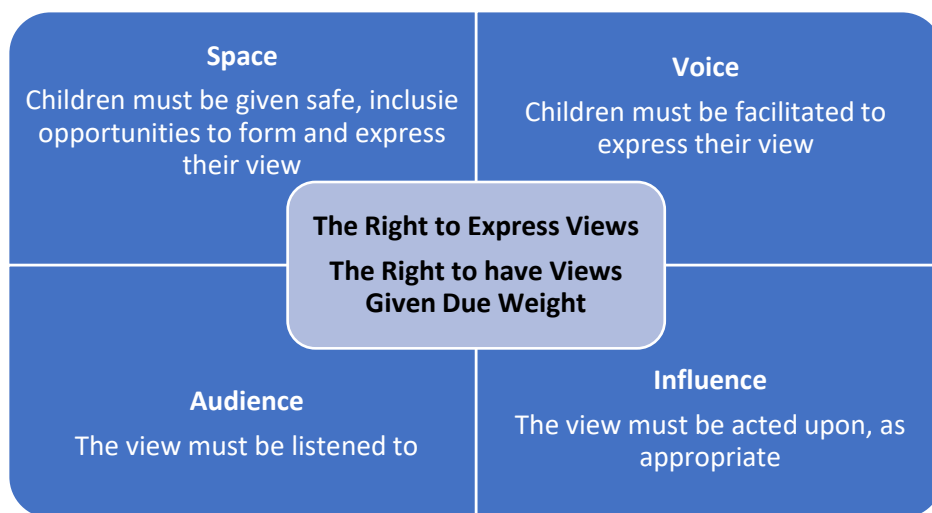
Figure 3.22 Lundy's Model of Participation (Department of Children and Youth Affairs 2015)

Care and consideration for children with identified special educational needs were considered in line with information from their Student Support Files[20] (DESb 2007), as provided by the CTs in the Additional Learning Needs Information form included in Appendix K.2. The researcher ensured to allow time to research and learn about any particular need that a child may present with during the study and endeavoured to gather his/her perspectives through multiple means, namely: semi-structured observations, semi-structured interviews, and pedagogical documentation, as described in Sections 3.5.1; 3.5.2; and 3.5.3. O'Brien's (2009) study acknowledged that teachers involved in her study were acquainted with the children and she felt this was a limitation. Therefore, the children were not familiar with the researcher prior to the sessions, and the researcher was not their CT or SET, nor had the researcher ever worked in their school. Moreover, the children addressed the FSL and the researcher in first-name terms in the hope of reducing the threat of a power relationship of authority. The researcher consciously endeavoured to remain scrupulously non-judgemental and remained open-minded to the diverse needs and individuality of each child. Kvale (2012) argues that the soundness of ethical decisions in an interview situation lies with the researcher. Therefore, the

---

[20] The Student Support File is a document that notes information gathered, plans and interventions to assist the school in providing the appropriate level of support to students in their educational needs (DESb 2007; 2017a).

researcher consistently sought clarification in relation to ambiguities in statements during the semi-structured interviews to ensure the children and CTs had input in the verification of their statements (Alvesson 2011).

Ethical permission was sought from MIREC in April 2018 and confirmation of this approval, which was granted on 04 May 2018, is included in Appendix G.1. The following sections will now introduce the reader to qualitative data-analysis processes applied in this case study.

3.7 Analysis of the Data

Data-analysis is the process of applying logical techniques to describe, illustrate, and evaluate data (Fitzpatrick 2017). The researcher must consider the outcomes they wish to achieve, be it theoretical ramifications or real-world case studies, before deciding on data-analysis processes (Woodwell 2014). This study gathered children and CTs' perspectives regarding the introduction to FS in an Irish primary school. Thus, the data-analysis sought to interpret a real-world situation (Woodwell 2014) through a descriptive analysis of the case, which is common when participants are the foci (Walliman 2018). The interpretation of these perspectives was informed by the conceptual model, the literature review, and the researcher's experience as a primary school teacher and a FSL. This search for understanding and insight adopts the assumption of interpretivism, explored previously in Section 3.3 (Thomas 2013). As the findings were intended to address questions generated from theories and previous empirical research, a deductive data-analysis was applied (Woodwell 2014; Patton 2015), as summarised in in Figure 3.23.
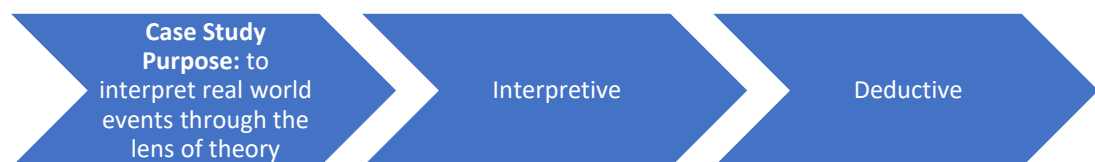
Figure 3.23 Case Study Analysis Outcomes (Woodwell 2014)

3.7.1 Qualitative Data-analysis

There is no single means to analyse qualitative data, as it involves making sense of the data in terms of the participants' definition of the situation, therefore, there is no one formula for this (Cohen et al. 2011; Patton 2015). However, procedures followed to analyse the data must be integral (Cohen et al. 2011; Patton 2015). Therefore, the researcher ensured to organise, account for, and explain data, noting patterns, themes, categories, and regularities (Cohen et al. 2011), and a qualitative data-analysis approach was adopted based on the techniques and procedures recommended by Cohen et al. (2011), Braun and Clarke (2006), Woodwell (2014), Silverman (2014), Patton (2015), Saldaña (2016), Walliman (2018), Yin (2018) and Miles and Huberman (2019). This process was encompassed by a cyclical approach of data reduction, data displays, and conclusion drawing and verification, as illustrated in Figure 3.24 (Mc Gee-Brown 1995; Woodwell 2014; Miles and Huberman 2019).
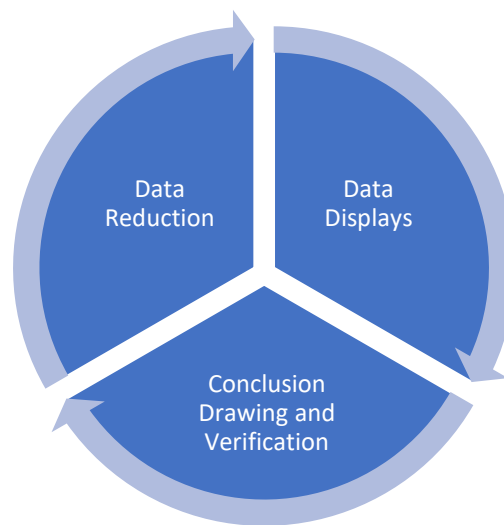
Figure 3.24 Data-analysis Components (Miles and Huberman 2019)

Data reduction arose during key stages, namely: the formation of the conceptual framework, the creation of focused research questions and resulting decisions regarding data-collection approaches, as specific data were chosen to remain in the study. It continued with the selection and simplification processes that occurred during field note transcriptions, previously explored in Section 3.5.1. Data were then organised into accessible information through the use of data displays which are

detailed later in Section 3.7.2.2. Emergent findings were transferred to graphs and charts informed by the conceptual framework of the study to comprehend and draw justified conclusions from the words gathered. Conclusion drawing and verification techniques evolved from these displays, as explored in Section 3.7.2.3, which subsequently informed the following chapters.

3.7.2 Thematic Data-analysis

Thematic data-analysis is compatible with constructivist paradigms, as this method examines ways in which events, realities, meanings, and experiences are the effects of a range of discourses operating within society (Braun and Clarke 2006). Moreover, in thematic data-analysis, patterns are identified as socially produced, thus, occurring within a social constructivist epistemology (Braun and Clarke 2006). Thematic analysis enabled the researcher to identify categories, and subsequently, themes within the data and interpret findings (Braun and Clarke 2006; Saldaña 2016). This occurred through the preparation of the data, the creation of codes, categories, and themes, and an interpretation of the data, as illustrated in Figure 3.25, below (Silverman 2014; Walliman 2018).
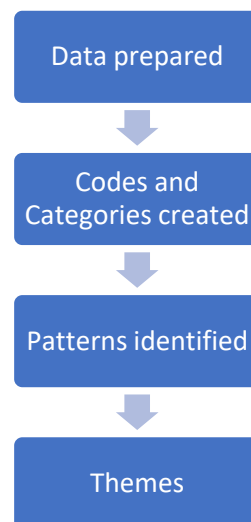
Figure 3.25 Thematic Analysis

Three data-analysis frameworks were utilised to support thematic analysis. These included Braun and Clarke's (2006) data-analysis evaluation framework, Saldaña's (2016) coding cycles and Yin's (2018) data analytic techniques and rival explanations, as illustrated in Figure 3.26.
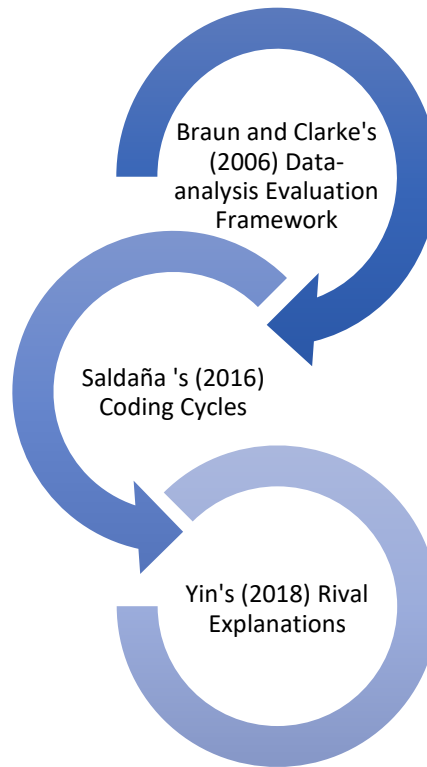
Figure 3.26 Data-analysis Frameworks Applied

Each stage of thematic analysis is now explored under the encompassing headings of Data Reduction; Data Displays; and Conclusion Drawing and Verification, as discussed previously.

3.7.2.1 Data Reduction

The data reduction process began with reference to the first stage of Braun and Clark's (2006) data-analysis evaluation framework, as summarised in Table 3.12 below.

Table 3.12

The First Three Stages of Data-analysis

Analytical Process	Practical Application
1. Familiarisation with the data	Phase 1: Repeated active reading of the data while memoing initial ideas
2. Generating Initial Codes	Phase 2:

	Production of initial codes from the data
3. Identifying Themes	Phase 3: Searching for themes

Firstly, a pseudonym was assigned to each participant to ensure anonymity and each set of raw data were prepared for analysis, as illustrated in Figure 3.27.

Semi-structured Observations	Semi-structured Interviews	Researcher Memo
• Handwritten field notes were transcribed to Microsoft Office Word documents (Microsoft 2020) • A Curricular Subject Grid was created on a Microsoft Office Word document (Microsoft 2020)	• Children's audio recordings (Olympus 2016) were transcribed to Microsoft Office Word documents (Microsoft 2020) • Class teachers' audio recordings (Olympus 2016) were transcribed to Microsoft Office Word documents (Microsoft 2020)	• Handwritten notes were transcribed to a Microsoft Office Word document (Microsoft 2020)

Figure 3.27 Preparation of Raw Data

During this process, raw data consisting of handwritten notes and audio recordings (Olympus 2016) were personally transcribed by the researcher to Microsoft Office Word documents (Microsoft 2020), and samples are included in Appendices C.1, E.2., and F.3 (Willig 2013). Data regarding curricular subject content was streamlined and input on a grid, of which a sample is included in Appendix D.1. In the final stage of data preparation, the researcher's memo was transcribed into a Microsoft Word document (Microsoft 2020), as included in Appendix C.2. Each raw data source (semi-structured observations, semi-structured interviews, and the researcher memo) were inputted separately to "NVivo 12", a data analysis software tool (QSR International 2018) as "cases". Attributes such as "class level" and "term" in which

the data were collected were also assigned. A screenshot of this process is included in Figure 3.28 below.
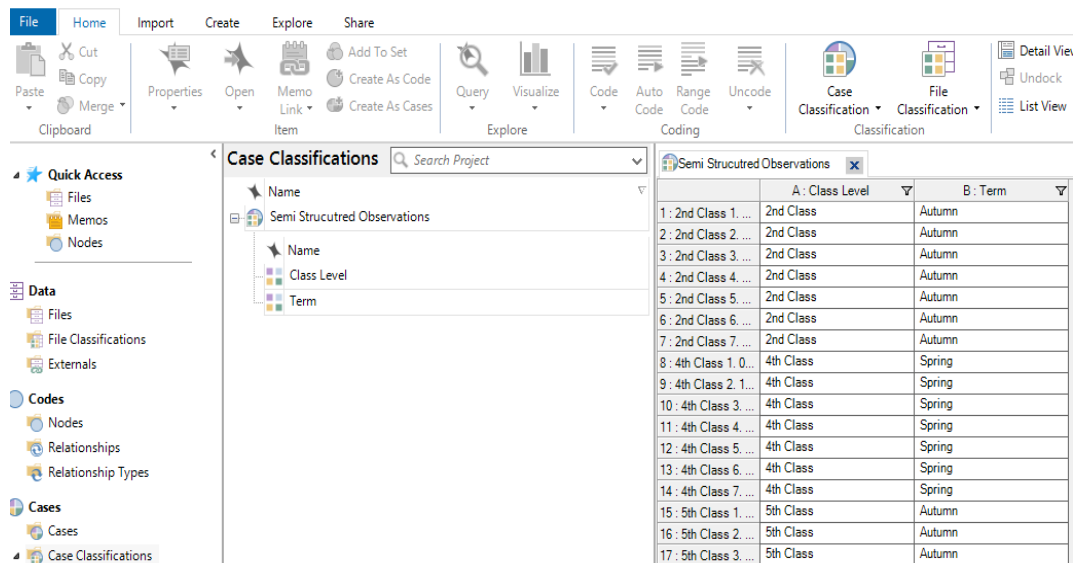
Figure 3.28 Data Input To "Nvivo 12" (QSR International 2018)

The second stage of Braun and Clark's (2006) data-analysis evaluation framework, as summarised in Table 3.12 and the first of Saldaña's (2016) two "cycles" (p. 68) of coding methods, as illustrated in Figure 3.29, below, were then applied.
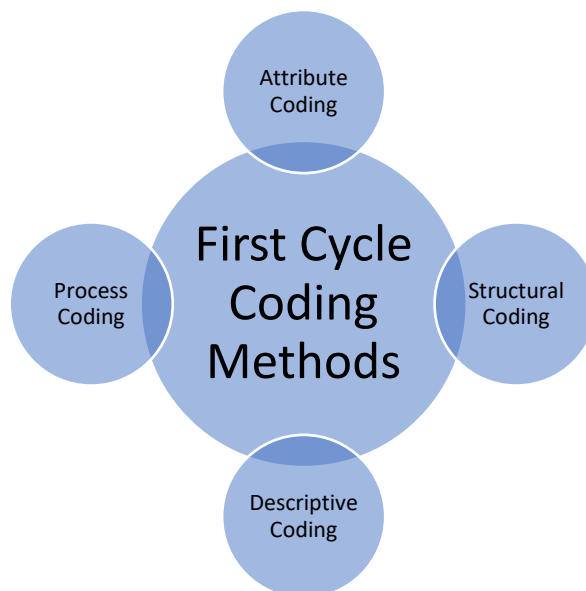
Figure 3.29 First Cycle Coding Methods (adapted from Saldaña 2016, p.73)

Coding is the first step in thematic analysis (Willig 2013; Bazeley and Jackson 2013). Codes (which are referred to as "nodes" in the "Nvivo 12" software) are abstract

representations of an object or phenomenon (Bazeley and Jackson 2013). During this process, words or phrases that suggested a concept associated with the research questions and the conceptual framework were "tagged" (Bazeley and Jackson 2013, p.70; Saldaña 2016). The literature framework, research questions, and the researcher's experience as a primary school teacher informed this step during data analysis. Saldaña (2016) refers to this stage as structural, or holistic coding. Multiple codes were used simultaneously to capture occurrences in single passages of text, as captured in Figure 3.30, below (Bazeley and Jackson 2013).
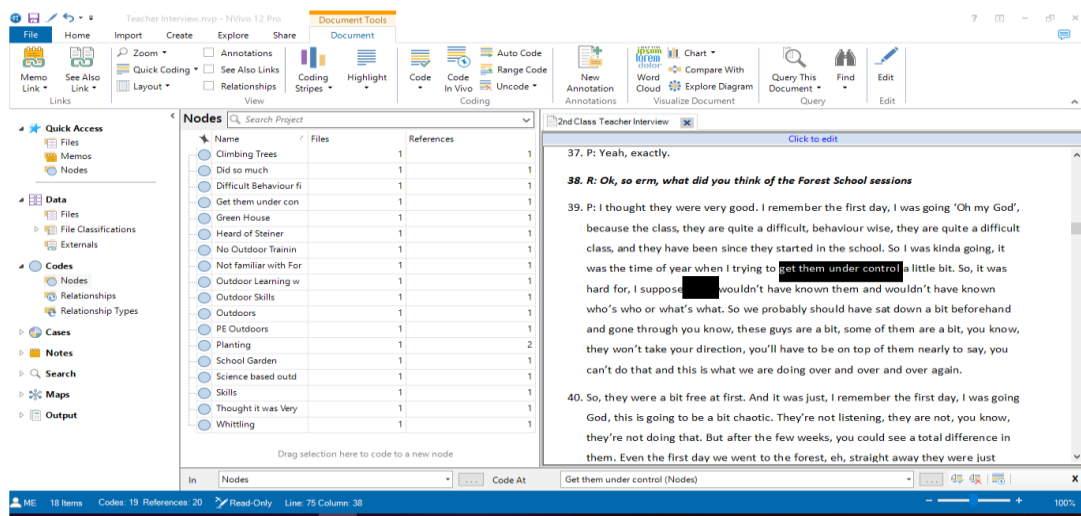
Figure 3.30 Structural Coding (Saldaña 2016)

The researcher then established patterns and correspondence between codes (Stake 1995) to define categories (Greig et al. 2007). An example of "culture" as a category for codes of "native" and "travellers" is demonstrated in Figure 3.31.
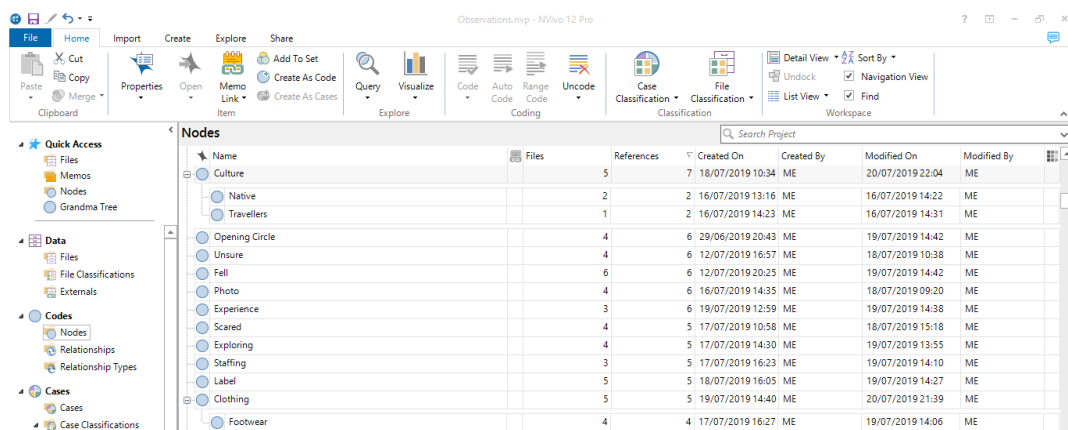
Figure 3.31 Descriptive Coding (Saldaña 2016)

While some code/category relationships were self-explanatory, others such as "outdoors" were equated with the Irish PSC vision, aims, principles, broad objectives, subject content objectives, and concepts ("use of the environment") (NCCA 1999a). In addition to this, actions such as "climbing" and "jumping" were coded through process codes such as "skills" and with Irish PSC curricular subject areas ("Physical Education") (PE). Saldaña (2016) refers to this as process coding, as illustrated in Figure 3.32.

Figure 3.32 Process Coding (Saldaña 2016)

At this stage, data had developed from raw observations and recordings to organised codes and categories. Data reduction was complete, and the data display stage could begin.

3.7.2.2 Data Displays

Data were then displayed by codes and subcategories on tables in a Microsoft Office Word document (Microsoft 2020). The information was organised by each data source (semi-structured observations, semi-structured interviews, and the researcher's memo). A sample overview is included in Figure 3.33.

Category	Sub-category	Sub-category	Sub-category	Sub-category	Sub-category	Sub-category	Sub-category
Learn	Nature	Skills	Assessment	Pedagogy	Language	Resources	Adult Learning
	Natural Resources Animals Weather Connection to Nature	Activities Life Skills Problem-Solving	Self-Assessment Inspection	Questioning Child Learning Adapt Teacher-led	Talk and Discussion Listen Deer ears Label Conversation Gaeilge Talking object Vocabulary Communicate Alliteration Puppet Story Rhyme	Camera Marshmallows Tarp Flag Skeleton Charcloth Cotton wool	CPD

Codes

Figure 3.33 Data Displays of Codes and Categories

Certain findings began to emerge at this point as categories, such as "learn", were created to represent sub-categories, namely: "nature", "skills", "assessment", "pedagogy", "language", "resources" and "adult learning" in this incidence. Moreover, these visual summaries provided means of seeing patterns and relationships in the data, which is explored further in later sections (Bazeley and Jackson 2013). The second cycle of data-analysis according to Saldaña (2016) was then applied. This began with pattern coding, which involved grouping of summaries from the first cycle into a smaller number of categories (Saldaña 2016). Emerging themes from the data were identified in pattern codes to "pull together" first cycle material into a more meaningful unit of analysis (Saldaña 2016, p.236), as included in Appendix N.1.
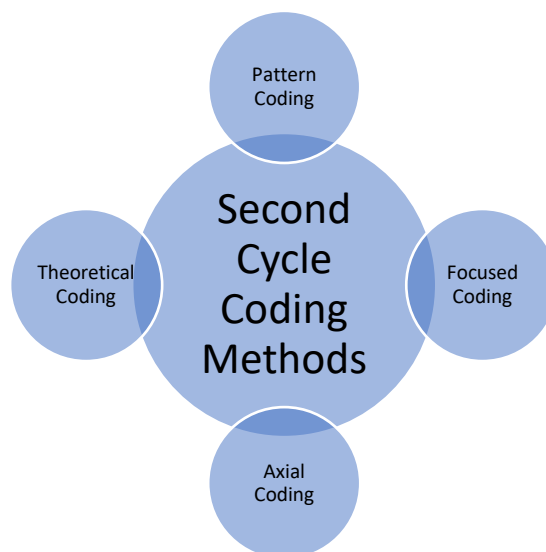
Figure 3.34 Second Cycle Coding Methods (adapted from Saldaña 2016, p.235)

Codes were defined into most frequent and significant categories in focused coding (Saldaña 2016) and eventually emerged as themes that captured and summarised the data (Thomas 2013). This process involved synthesising information across data sources as the researcher compared data to data, data to code, code to category, category to category and category back to data, as illustrated in Figure 3.35 (Mc Gee-Brown 1995; Saldaña 2016).
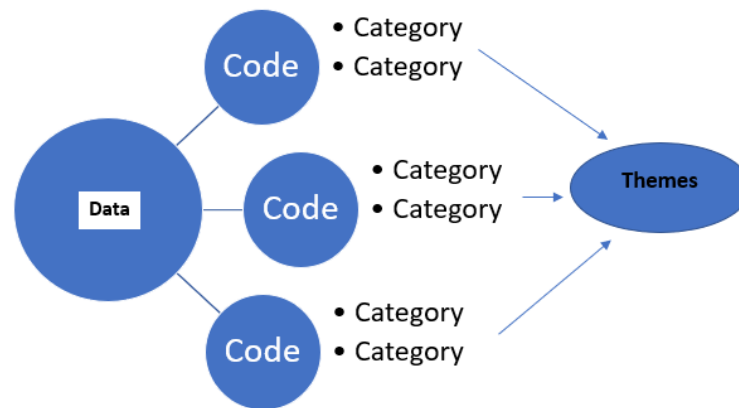
Figure 3.35 From Codes to Categories (adapted from Saldaña 2016, p.14)

The analysis of the data then became iterative (Ravitch and Carl 2016) and the conceptual framework, explored in Chapter One, was used to organise the findings within a theoretical structure. Through focused coding, illustrated in Figure 3.36 (Saldaña 2016), data were displayed through the lens of Bronfenbrenner's (Bronfenbrenner and Morris 2006) PPCT within the Bio-ecological Model (Bronfenbrenner 1979), as advised by O'Toole (2016).
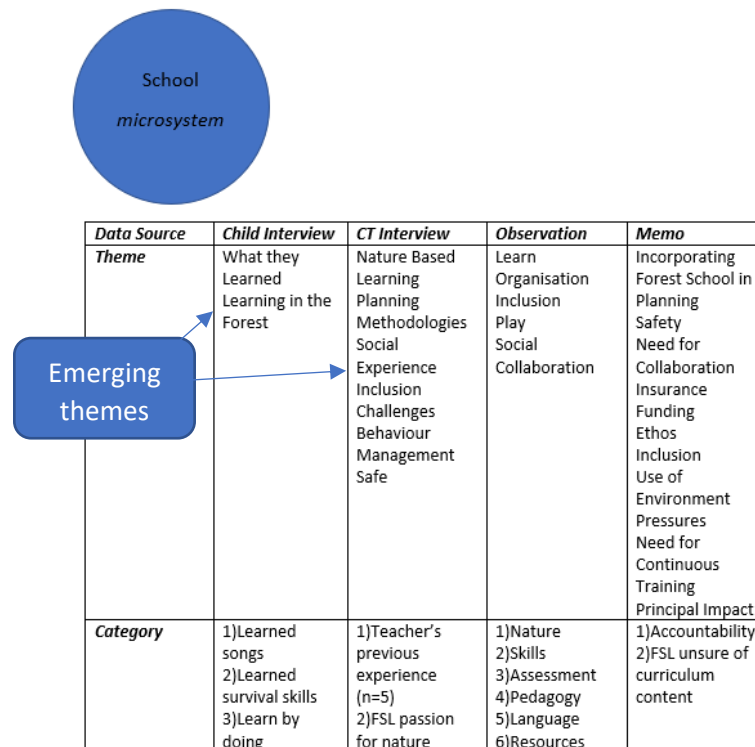
Figure 3.36 Display of Data within The Conceptual Framework

A synthesis of Braun and Clarke's (2006) stage four and five, which included a review of the themes, and defining and naming themes, as outlined in Table 3.13, were applied.

Table 3.13

The Second Cycle of Data-analysis

Analytical Process	Practical Application
4. Reviewing Themes	Phase 4: Refinement of themes through reviewing themes
5. Defining and Naming Themes	Phase 5: Defining a further refinement of themes using a thematic map of the data
6. Producing the Report	Phase 6: Concise, coherent, logical, non-repetitive account of the story which includes evidence of the themes within the data to make an argument

At this point the researcher "took stock" of the data (Bazeley and Jackson 2013, p.117) in more detailed colour-coded data displays, as illustrated in Figure 3.37, to reflect and review on the findings.
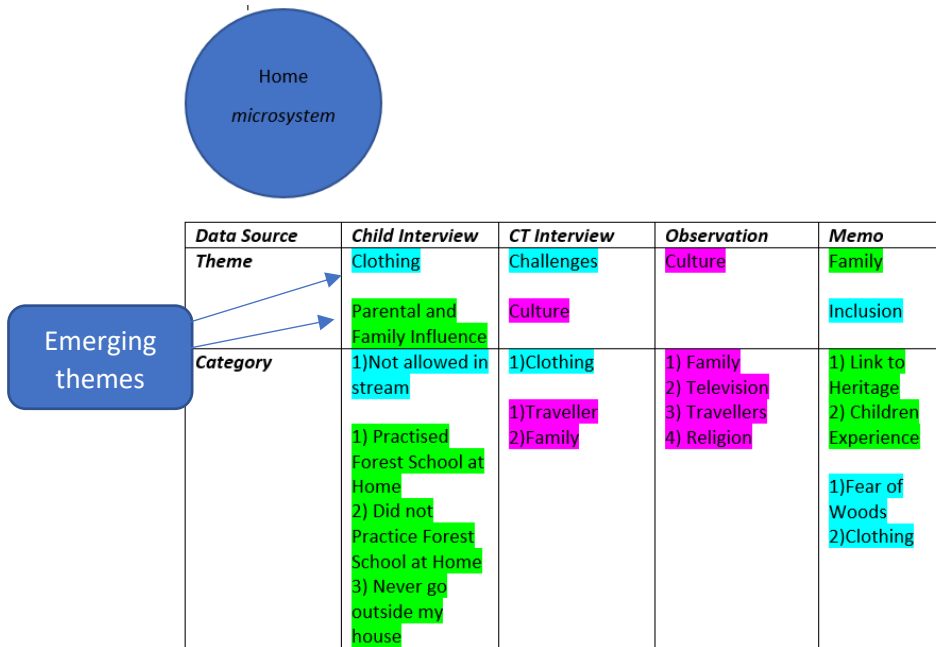
Figure 3.37 Colour-coded Data Displays

3.7.2.3 Conclusion Drawing and Verification

Four of Yin's (2018) five analytic techniques were then applied to develop the analysis of the data further (cross-case synthesis is applicable to multiple case studies only). These data analytic techniques applied include pattern-matching, explanation building, time series analysis and logic models (Yin 2018).

3.7.2.3.1 Pattern-matching

Pattern-matching (Yin 2018) compares the empirical patterns observed with a predicted one, such as the vision, aims, principles, broad objectives, subject content objectives, concepts and skill development, and assessment of the Irish PSC observed during FS (NCCA 1999a; NCCA 2007). Thus, the research questions of:

➢ *How do the children perceive the Forest School sessions?*

➢ *What principles and subject content of the Irish Primary School Curriculum, to include Aistear: The learning outcomes of the Early Childhood Curriculum Framework, are observed during the Forest School sessions?*

➢ *How do the class teachers perceive the Forest School sessions?*

> *What learning and teaching methodologies, if any, do the class teachers identify as unique to the Forest School approach?*

were revisited to examine the findings against these categories (Willig 2013; Yin 2018). The conceptual framework was also revisited at this time, and data were organised within the Bio-ecological Model during a search for themes, as included in Appendix N.2 (Bronfenbrenner 1979; Bronfenbrenner and Morris 2006). During this process, it became evident that some codes, such as "play", overlapped across different systems (Bronfenbrenner 1979). Thus, raw data were reviewed to ensure correct interpretation within the context of the study prior to further interrogation. Patterns were cross examined for rival explanations (Yin 2018) to make every effort that all reasonable threats to validity were addressed, as discussed in Section 3.6 previously.

3.7.2.3.2 Explanation Building

Emergent findings were explored within themes and categories with reference to previous studies and literature to explore possible similarities, such as the dominance of social learning outcomes and the challenges related to professional collaboration. Time was allocated to explain important episodes and passages of text to reflect, triangulate, and create a critical response to first impressions of the data (Stake 1995). One such example of this occurred when the CTs' individual interviews were revisited and formatted as word clouds to provide visual summaries of their perspectives. Explanations were based on a series of iterations of making the initial statement, comparing the data from the case against the statement, revising it, and then comparing other details of the case against this revision (Yin 2018). The goal during this hypothesis-generating process was to develop ideas for further study, which are discussed in Chapter Six (Yin 2018).

3.7.2.3.3 Time Series Analysis

Time series analysis is the measurement of a single pattern that is tracked over time (Yin 2018). Themes that emerged from the data were analysed through specific time sections from the FS sessions. These themes were then related back to theory during explanation building and logic model elements of the data-analysis to

ensure that matches occurred between the observed trend and either the theoretical or a rival trend (Yin 2018). Chronological sequences are the compilation of occurrences in chronological order (Yin 2018). The strength of the case study is that it allows the researcher to trace items over time to investigate presumed causal relationships. This occurs in certain conditions, such as when events occur before other events and the reverse sequence is impossible, when events occur that are followed by other events on a contingency basis, events that are followed by other events after a prescribed interval of time and when certain time periods in a case study can be marked by classes of events that differ substantially from those of other time periods (Yin 2018). Complex time series may occur when the trends and patterns of the case are mixed, and non-linear models of analysis are required (Yin 2018). An example of a complex time series is included in Figure 3.38, in which the movement of children from one activity to another is depicted in an excerpt from a semi-structured observation.

13:09	13:24
• 4 children making rope swing with class teacher, 2 of these children are collecting a stick for the seat. • 4 children making their own rope swing • 1 child in hammock • 2 children are whittling • 1 child is taking down the tarp with the Forest School Leader • 1 child is creating a skeleton • 4 children are climbing the tree • 5 children are making a shelter with the SNA	• 5 children are swinging on the completed swing • 2 children and the class teacher are still completing their swing • 1 child (Watson) is exploring the area with the Forest School Leader • 1 child is throwing a rope over a branch • 1 child is in the hammock, 3 are pushing her • 1 child is in the tree • 1 child is opening the clay • 10 children are building shelters

Figure 3.38 Complex Time Series

3.7.2.3.4 Logic Models

Logic models stipulate a complex chain of events that occur over an extended period of time to demonstrate how activities within the FS session may impact a child's attainment of the Irish PSC vision, aims, principles, broad objectives, subject content objectives, and concepts and skill development. This process consists of matching empirical data to theoretically predicted events (Yin 2018). Logic models occurred throughout the data-collection process and findings were matched to previous research and literature within the conceptual framework. These include immediate outcomes of the introduction of the FS approach, such as the use of tools,

an intermediate outcome of the development of social skills, and ultimate outcomes such as awareness of nature-based learning opportunities in the local environment.

The final section of this chapter outlines the limitations of the study, which include the positionality of the researcher, the characteristics of the research method, the sample size, and the potential to include additional perspectives.

3.8 Limitations of the Study

This section outlines and acknowledges the limitations of this study. It also addresses how elements of these limitations were mitigated. Limitations include the professional identity of the researcher, the inability to generalise a case study, power inequalities, data-collection method shortcomings, sample size and participant selection.

The ability to provide the reader with rich descriptions in qualitative data is both a strength and a weakness of the case study (Silverman 2014). It can be argued that interpretivist studies may have gone "too far" in abandoning the scientific procedures of verification when creating generalisations (Cohen et al. 2011, p.21). Thus, the researcher has taken great care to ensure that the methodological approach was firmly grounded in theory, as explored throughout this chapter (Silverman 2014). As the researcher is an Irish primary school teacher and a member of the IFSA, it was crucial that research strategies evolved from the research questions, as explored in Section 3.2 to avoid anecdotal reports (Blaikie 2010; Silverman 2014).

It is argued that single case studies are not useful for generalising (Blaikie 2010; Woodwell 2014), however, some qualitative researchers have rejected the need to generalise findings (Blaikie 2010), stating that they are applicable to the case itself as a real-life study that holds intrinsic value. The findings are based on the knowledge of the characteristics of this case (Blaikie 2010) and transferability between contexts is possible if they can be judged to be similar (Blaikie 2010; Woodwell 2014). Generalisability potential is based on the rich description provided, therefore, sufficient information has been provided through thick descriptions of the context of this research to allow the reader to judge whether the findings may be

relevant to another context about which they have similar information. As a result, there is potential to generalise with other cases in terms of relevant characteristics, and the arguments created in this case study can give rise to explanations that may potentially be applied to new cases (Blaikie 2010; Willig 2013; Woodwell 2014).

The context of the study and the threat of power inequalities also pose a threat to qualitative studies (Cohen et al. 2011). Therefore, the researcher employed reflective practice, as outlined in Section 3.6.1, during data-collection and analysis to remain mindful of this. A sample of this reflexive practice was also recorded in the researcher's memo, below.

Researcher's Memo

"The fifth class children were aware of my observations and the fact I was taking notes today."

(12 Sep 2018)

As case studies require active involvement on the part of the participant (Willig 2013), the researcher endeavoured to take all ethical precautionary measures, as detailed in Section 3.6.5 of this chapter. While a strong case was made for the child-centred data-collection methods which considered potential power inequalities in a school setting, difficulties were encountered. The novelty of the equipment, especially the "Instax Mini 9" Polaroid camera (Fujifilm 2017) provided too much of a distraction from learning and teaching processes during FS. Furthermore, the children wanted to take photographs of their friends to bring home, as shown in Figure 3.39, which raised ethical issues. This camera was removed from the data-collection equipment as a result.

Figure 3.39 Children's Feedback on Camera Use in Data-collection

Writing equipment, as included in Figure 3.15, proved a useful medium for the child's voice. The children were forthcoming in writing messages regarding aspects of FS they enjoyed, or did not enjoy, which were included in pedagogical documentation during the CTs' semi-structured interviews. In addition to this, the children made requests during the FS sessions, as is evident in the photograph in Figure 3.40 below.
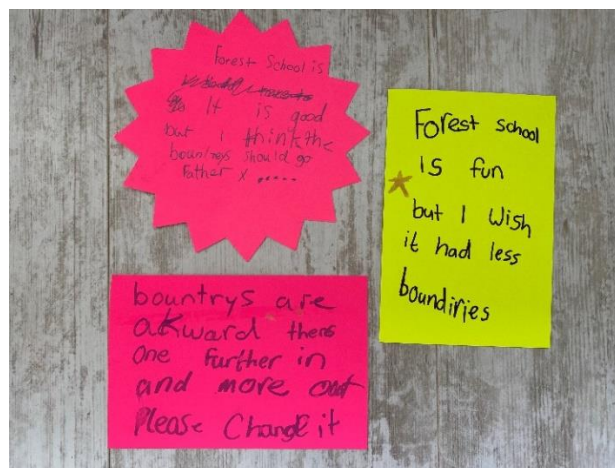
Figure 3.40 Children's Requests Using Writing Equipment

However, this method of recording the child's voice was affected during inclement weather conditions, as the paper and pens were unusable in wet and damp conditions. Thus, it was not a dependable source of communication for the children to rely on. In addition to these obstacles, limitations of semi-structured journey interviews were also documented in the researcher's memo, as included below.

"Walking Interviews- Journeying

I felt that the younger children were distracted as we walked around during the interviews, rather than stimulated.

While the children's assent was sought, I questioned if talking to me seemed like a punishment to some children- like Alder who wanted to 'play' instead.

I had planned to interview children in groups of five, but it did not work out as the children wanted to talk to me in their organic friendship groups. Oleander and Rocky asked to talk to me as a pair. Holly wanted to talk to me alone."

(03 Nov 2018)

Children in second class requested to "*play*" instead of partaking in an interview. Moreover, some children responded to the invitation to "*talk*" with the researcher as if it were a reprimand and opted out of the interview as a result. While the forest provided a stimulating learning environment, it became a distraction during the semi-structured journey interviews. Children engaged in conversations with peers as they moved through the forest environment and, as a result, some children departed the interview and reengaged at a later time. This resulted in missed opportunities to gather data.

This single case study had a small sample size, as acknowledged in Section 3.4. This was due to a lack of suitable cases to fit the purposive sample study, as discussed previously. It ought to be noted that the school principal chose the participating classes in the study also. While a larger case may have provided additional data, the researcher was bound by time and financial constraints. The FS sessions were timed from September to November 2018 and from February to May 2019, as outlined in Section 3.4.1.4. This schedule was purposively planned when the researcher made a conscious decision not to collect data in June, as based on her own teaching experience, this can be a busy month consisting of school tours, standardised assessment tests, and school report writing. This timetable resulted in the occurrence of initial FS sessions during the second week of a new academic year as children were still adjusting to their new classrooms and with their new CTs. It also resulted in the second term of FS sessions beginning in February and, as a

consequence, challenging weather conditions were recorded during some children's first experience of a FS session.

The researcher made the initial decision to gather data based on the perspectives of the CTs as she felt that their experience was best suited to record the Irish PSC's vision, aims, principles, broad objectives, subject content objectives, concepts and skills development and assessment of that particular class level. Inclusion of SETs' perspectives were considered, but the support staff had not been allocated prior to the commencement of the study. In addition to this, the SETs' rota altered each week, which resulted in some staff attending FS as a one-off visit. However, in hindsight, including their perspectives may have been beneficial. The decision not to include the FSL's and supporting SNAs' perspectives was based on the premise that they had not received formal education regarding learning and teaching in the context of the Irish PSC. Their insights may also have provided the research with valuable insight. The perspectives of the parent(s)'/guardian(s)' of the children may have also broadened the opinions gathered in the study.

Finally, critiques of thematic analysis outline that this data-analysis process does not follow a distinct method (Terry et al. 2017). It was therefore vital that the process was outlined in a meticulous manner through a detailed chain of events (Yin 2018). Moreover, it was imperative that findings, presented in the following chapter, were not outlined in an overly descriptive or purely summative means (Terry et al. 2017).

3.9 Conclusion

This chapter provided an in-depth analysis of the methodological approaches applied in this study, which explored the overarching question of *"How do Children in Senior Infants, Second Class, Fourth Class and Fifth Class and their Teachers Perceive the Impact of the Introduction of Forest School Sessions on Learning and Teaching in an Irish Primary School?"* with clarity and rigour. This process began with an outline of the previous FS experience of the researcher and initial impressions of this emergent, experiential and child-led approach to learning and teaching. The methodological processes were grounded in Bronfenbrenner's Bio-ecological PPCT Model (Bronfenbrenner 1979; Bronfenbrenner and Morris 2006), which outlined the

requirement for critical constructivist approaches of truth (Lather 2006; O'Toole 2016) before addressing the formation of the research questions, which were refined through the application of Yin's (2018) cyclical research design. Philosophical underpinnings regarding the ontological position of relativism and the position of hermeneutic enquiry employed in this research were outlined. Furthermore, the epistemological view of interpretivism, in which this study was located, created an argument for the application of qualitative research methods. As a result, data-collection methods of semi-structured observations, semi-structured interviews, semi-structured journey interviews and researcher memoing were applied through the case study method. This single, exploratory case study adopted a non-probability, purposive sampling approach and the sample selection, variables and timeline of data-collection were detailed in this chapter. A thorough exploration of research integrity strategies outlined how reflexivity, objectivity, dependability, validity, credibility, reliability, and transferability were maintained, and ethical considerations were addressed. This chapter then detailed how qualitative data-analysis approaches, comprising of data reduction, data displays, conclusion drawing, and verification strategies were applied. Limitations of this research study were also acknowledged.

Themes which emerged are explored in the following chapter: Research Findings. These themes of Learning and Teaching, Challenges, and Inclusion are outlined as three key themes of: Learning With, In, and Through the Environment during Forest School; Challenges of Learning and Teaching Outdoors in the Context of the Irish Primary School Curriculum; and Inclusion for Children with Diverse Learning Needs and Interests during Forest School, prior to a detailed discussion of the findings in Chapter Five.

Research Findings

New Growth

4.1 Introduction

Figure 4.1 Sowing the "Seeds" (Murphy 2019)

"Seeds" (data) gathered and stratified in the previous methodology chapter are discussed as the "seedlings" (findings) grow.

The purpose of this research was to gather perspectives regarding the phenomenon of the Forest School (FS) approach to learning and teaching and determine if this emergent, experiential, child-led method was congruent with the Irish Primary School Curriculum's (PSC) vision, aims, principles, broad objectives, subject content objectives, concepts and skill development, and assessment in four class levels (senior infants, second class, fourth class and fifth class) in an exploratory case of a single school (Thomas and Hodges 2010; Thomas 2013). As this study sought to uncover the perspectives of the participants and their lived experience within constructivist and interpretivist paradigms, a qualitative research approach was used to explore individual insights (Patton 2015). Data collected through direct observations and reported experiences are outlined through rich and vivid descriptions in this chapter (Blaikie 2010; Yin 2018).

4.1.1 Themes which Emerged from the Data

Themes of Learning and Teaching, Challenges, and Inclusion arose from rigorous data-analysis processes, explored in the previous chapter, of which an overview is provided in Appendices N.1 and N.2.

Learning and Teaching	Challenges	Inclusion
• Play • Games • Social learning outcomes • Child-led • Role of class teacher • Professional planning for learning and teaching • Assessment of and for learning • Behaviour management • Attainment of curricular learning objectives • Continuing professional development • Use of the natural outdoor environment • Nature-based learning	• Outdoor pedagogical knowledge • Need for parental involvement • Class size • Unpredictable events • The weather • Suitable clothing • School policies • Insurance • Access to natural environments • Financial barriers	• Learning opportunities for children with special educational needs • Pedagogical documentation • Choice • Adult impact • Consistency of supports • Sensory inputs

Figure 4.2 Themes and Sub-themes which Emerged from the Data

These themes and sub-themes were further refined to create three key themes, as outlined in Figure 4.3, below (Braun and Clarke 2006).

➢ **Theme One:**
Learning With, In, and Through the Environment during Forest School

➢ **Theme Two:**
Challenges of Learning and Teaching Outdoors in the Context of the Irish Primary School Curriculum

➢ **Theme Three:**
Inclusion for Children with Diverse Learning Needs and Interests during Forest School

Figure 4.3 Key Themes which Emerged from the Data

Findings within each of these three key themes are presented in the following sections of this chapter.

4.2 Theme One: Learning With, In, and Through the Environment during Forest School

The findings in this first key theme of Learning With, In, and Through the Environment during Forest School are structured under the following headings of: Class Teachers' Experiences and Access to Outdoor Pedagogical Continuing Professional Development; Class Teachers' Perspectives of Teaching through the Forest School Approach; Children's Perspectives of Learning at Forest School; Learning Processes during Forest School; Play-based Learning during Forest School; Personal and Social Development during Forest School; The Role of the Class Teacher during Emergent, Child-led Approaches to Learning at Forest School; and Planning and Preparation for Learning and Teaching during Forest School.

4.2.1 Class Teachers' Experiences and Access to Outdoor Pedagogical Continuing Professional Development

All class teachers (CT), represented in Figure 4.4 below, were familiar with the term "Forest School" and stated that they understood it was an approach to learning and teaching that took place outdoors.

Heather _senior infant teacher_	Dandelion _senior infant teacher_	Poppy _second class teacher_

Snowdrop _fourth class teacher_	Foxglove _fifth class teacher_
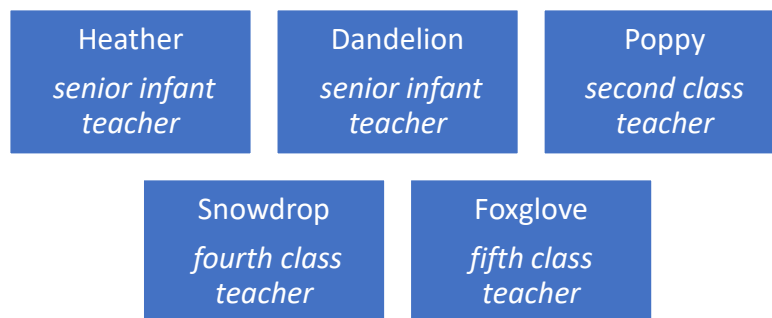
Figure 4.4 Class Teachers Involved in this Study

Figure 4.5 below describes the previous knowledge of the individual CTs about the FS approach to learning and teaching.

Heather
- Her daughter attended forest school in an early childhood education setting
- Her sons attended an after-school Forest School style camp

Dandelion
- Heard of the concept of Forest School previously, but was not overly familiar with this approach to learning and teaching

Poppy
- Felt the Forest School approach followed the Steiner philosophy to teaching and teaching as she knew it occurred outdoors, but said that was the extent of her knowledge

Snowdrop
- Watched videos of the Forest School approach to learning and teaching online
- Attended an information meeting regarding the completion of the Forest School Leadership qualification

Foxglove
- Heard of Forest School, but said he was not familiar with it
- Understood that the Forest School approach to learning and teaching was about children experiencing life outside the classroom

Figure 4.5 Class Teachers' Previous Knowledge of The Forest School Approach to Learning and Teaching

While the information in Figure 4.5 demonstrated a familiarity with the term "Forest School", the CTs had not completed the FS Leadership continuing professional development (CPD) programme and held limited knowledge regarding the guiding principles of this approach to learning and teaching. Only one CT; Heather, who was one of the senior infant CTs, had completed a qualification in outdoor pedagogy: Scout Leadership[21]. Although she felt that her Scout Leadership qualification demonstrated parallels in underpinning philosophies with the FS approach, such as principles that valued the outdoors and the benefits of outdoor learning for children, she stated that it differed from the FS approach. A summary of individual CTs' outdoor pedagogical experience is outlined in Figure 4.6, below.

---

[21] The Scout movement, also known as Scouting or the Scouts, is a voluntary non-political educational movement for young people. The aim of the organisation is to encourage the social, physical, intellectual, character, emotional, and spiritual development aspects of young people so that they may achieve their full potential and as responsible citizens, to improve society.

Heather
- Scout Leadership qualification

Dandelion
- No education in outdoor pedagogy, but planned for water and sand play and the use of mud kitchens during structured play outdoors in Aistear: The Early Childhood Curriculum Framework (National Council for Curriculum and Assessment (NCCA) 2009a)

Poppy
- No outdoor pedagogical education

Snowdrop
- No outdoor pedagogical education

Foxglove
- No outdoor pedagogical education

Figure 4.6 Class Teachers' Previous Education in Outdoor Pedagogical Approaches

This lack of formal pedagogical education in outdoor teaching methods did not prevent CTs from bringing children outside to learn, however. Dandelion, a senior infant CT, had incorporated outdoor play-based approaches to learning and teaching as recommended by Aistear: The Early Childhood Curriculum Framework (NCCA 2009a). Moreover, previous outdoor educative experiences outlined by Heather, (a senior infant CT), Poppy (second class teacher), Snowdrop (fourth class teacher), and Foxglove (fifth class teacher) were congruent with the Irish PSC curricular content in Mathematics, Social, Environmental, and Scientific Education (SESE), and Physical Education (PE), as outlined in Chapter Two (NCCA 1999b; 1999c; 1999d; 1999e; 1999j; 1999s). An emphasis was placed on gardening in the school at one stage also, however, this initiative was short-lived, and the onus to bring children outdoors remained with individual staff members, as Heather, a senior infant CT, described below:

> "*The school garden has been a big thing. At one stage we had a dedicated school gardener that came in and she would bring us all out and show us what to do. We don't have a school gardener anymore, so it's left up to individual teachers to bring the kids out, but we've a lovely willow dome and a lot of the time in the Summer or the Spring we go out and we do story time out there*".

(Heather, senior infant CT)

Methodologies and approaches utilised during outdoor teaching previous to introduction of FS are listed in Figure 4.7, below. It is evident that the majority of these strategies were curricular-based, teacher-led, and outcome-focused learning activities.

Figure 4.7 Class Teachers' Previous Approaches to Teaching Outdoors

Heather, a senior infant CT, reflected that she relied on pleasant weather conditions to incorporate outdoor teaching methodologies and, thus, rarely scheduled lessons in the school garden. She compared this with the formally planned FS sessions in this study and felt that the time allocated for outdoor learning and teaching opportunities ensured that children were prepared to go outdoors, regardless of the weather. Foxglove, the fifth class teacher, felt that outdoor pedagogical CPD would have been helpful to ensure curriculum attainment and use of suitable methodologies to achieve high quality teaching:

> *"But I'd say the training would be huge. Erm, to maybe pull out the things that you don't realise that you are actually giving them. Because you could, anyone could bring them out and go do some of the stuff and you are teaching them loads, but if you want to plan it properly, you really want to know what you're trying to nail. I think to get taught that as a teacher would be important,*

certainly, they are both important, there's no point getting taught how to do it properly and then not implementing it well".

<div align="right">(Foxglove, fifth class teacher)</div>

Dandelion, a senior infant CT, also outlined the importance of the FS Leadership CPD in this case. She acknowledged the FSL's preparation each week and felt that she would require this level of qualification to feel confident in facilitating FS.

"You would definitely need someone with the qualifications and with the understanding of how to run forest schools and then I suppose Bluebell (the Forest School Leader (FSL)) had a lot of gear as well; the hammocks, the ropes, the fire, you know, all of these different things. She was very prepared so, you'd have to have somebody like that onboard. I don't think, as a teacher, I would be confident enough to strike out with a gang tomorrow into the woods, even though I've been there for ten weeks."

<div align="right">(Dandelion, senior infant CT)</div>

The following sections provide the reader with participants' perspectives of this approach to learning and teaching.

4.2.2 Class Teachers' Perspectives of Teaching through the Forest School Approach

The CTs provided a positive response to the FS approach overall. Foxglove, the fifth-class teacher, stated that *"the many needs of the children in the class were met and they all took something positive away from Forest School".* Heather (senior infant CT) outlined that as *"Forest School provided [a high] adult to child ratio",* it allowed for a *"focus on needs of child"* and an ability to *"be led"* by his/her *"activity and needs".* Dandelion (senior infant CT) observed that *"every part of the child, the emotional and physical, was catered to and nurtured in a stimulating environment".* Children were "*provided with choice of activity*" (Heather, senior infant CT), with "*option[s] to do different activities and specialise in the ones they enjoy*" (Poppy, second class teacher) and were *"allowed to try different experiences such as climbing trees that they would not usually get to do"* (Foxglove, fifth class teacher). Heather, a senior infant CT, noted that *"children need to see a connection between nature and the need to recycle, or reasons to walk rather than use a car, by engaging in nature"*

to live sustainable lives. As a result of FS, CTs felt children may become *"more connected to nature and are more likely to share that with others and to keep it as part of their culture"* (Snowdrop, fourth class teacher) as they *"need experience and understanding of nature to relate sustainability education to their lives"* (Heather, senior infant CT). While *"the forest provided an extraordinary environment"* (Foxglove, fifth class teacher), it also provided *"a space where children [could] move"* (Heather, senior infant CT), and *"every week there was something new and different in the forest"* (Dandelion, senior infant CT).

4.2.3 Children's Perspectives of Learning at Forest School

While twenty-eight children in the study had visited a forest with their family, teachers, friends, and/or organisations previously, only thirteen children were familiar with the term "Forest School". These children were aware of the concept of FS from conversations with a family member, peers in Scouting Ireland, Youth Reach[22], and from a cousin in the same school. While Vernon, a child in senior infants, acknowledged an initial fear of FS, *"'cause when we were here first, I thought it was going to be scary",* in general, the children responded positively to learning through the FS approach. Fifty of the fifty-five children looked favourably on being outdoors while engaging in playful approaches to learning, as they reflected on how they "*liked nature*" (Flo, fourth class; Brooke, second class) and listed "*climbing the tree*" (Cedar, fourth class; Basil, senior infants; Marina, senior infants; Sparrow, fourth class; Marjoram, fourth class; Raine, senior infants; Fleur, fifth class; Cliff, fifth class; Dill, fifth class; Jasper, second class; Ruby, second class; Clementine, second class) and "*playing in the stream*" (Jasmine, fourth class; Olive, senior infants; Aspen, fourth class; Flo, fourth class; Sandy; fourth class; Ivy, senior infants; Lily, fifth class; Ruby, second class; Clementine, second class; Clay, second class) as two of their favourite FS activities. One child, Oleander (fifth class), outlined his wish for more time in the forest. The children's perspectives also reflected an enjoyment of adult-led activities, as some children who said that they "*liked*" FS noted that they enjoyed using the resources provided by the FSL, namely: the tools (Robin, fourth class; Marjoram,

---

[22] Youthreach is an education, training, and work programme for early school leavers aged fifteen to twenty years of age. It offers support to young people to help them identify what they would like to do in adult life and allows them to gain an educational certificate.

fourth class), ropes (Sparrow, fourth class; Heath, senior infants), clay (Bay, senior infants), and the hammock (Sierra, senior infants; Sage, fourth class; Ruby, second class; Clementine, second class). Furthermore, the children outlined positive experiences of learning while engaged in adult-led activities of brewing herbal tea, creating "Hapa Zome" prints (Terra, senior infants) and partaking in the blindfold trail (Coral, fourth class). In addition to this, pedagogical documentation (Olsson 2009), included in Figure 4.8 below, depicted an enjoyment of playing in the hammock, using resources such as flint and steel, and building mini-beast shelters.

Figure 4.8 A Sample of Pedagogical Documentation

However, some structured elements of FS were not well received for others, namely: circle time (Sparrow and Marjoram, fourth class; Cedar, fourth class), shelter building (Amber, second class), and sitting while eating lunch (Sage, fourth class).

Learning processes which occurred in this study are discussed in the next section.

4.2.4 Learning Processes during Forest School
The children, CTs, and researcher engaged and observed learning processes listed in Figure 4.9, below, during the FS sessions.
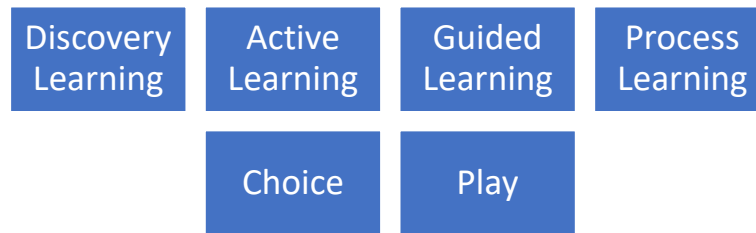
Figure 4.9 Learning Processes

Learning processes, namely: "*discovery learning*"(Foxglove, fifth class teacher), "*active*" (Heather, senior infant CT; Poppy, second class teacher; Snowdrop, fourth class teacher; Foxglove, fifth class teacher) and "*guided*" learning (Foxglove, fifth class teacher) with a focus on "*process*" (Researcher, researcher memo), "*choice*" (Heather, senior infant CT; Quill, second class; Lily, fifth class) and "*play*" (Researcher, observation records; Heather, senior infant teacher; Snowdrop, fourth class teacher; Jasmine, fourth class; Savannah, senior infants; Sparrow, fourth class; Marjoram, fourth class; Coral, fourth class; Oleander, fifth class; Lily, fifth class; Saffron, fifth class; Amber, second class; Vernon, senior infants; River, fourth class; Sage, fourth class; Raine, senior infants; Bay, senior infants, and Elm, fifth class) occurred during the FS sessions. One child, Robin (fourth class), noted learning during FS differed to the mainstream class "*'cause you can get out and learn how it would be in the real world instead of, like in class, just looking at pictures"* (Robin, fourth class), and noted that the natural environment provided new learning opportunities, namely the use of foraged natural resources as a food source, *"I learned I could eat Beech [tree leaves] and you could eat pancakes made out of nettles and tea"* (Robin, fourth class).

Play-based approaches to learning and teaching which occurred during these FS sessions are detailed further in the following section.

4.2.5 Play-based Learning during Forest School

Play observed during FS was considered as outlined in Aistear: The Early Childhood Curriculum Framework (NCCA 2009a), which was described in Section 2.3.4.2 previously. An overview is provided below in Figure 4.10.

Creative play	Games with Rules	Language Play	Physical Play	Pretend Play
• Dancing • Painting • Playing with junk and recycled materials • Working with play-dough and clay • Using their imaginations	• Turn-taking games	• Unrehearsed and spontaneous manipulation of sounds and words • Jokes • Funny stories	• Physical play: movements, co-ordination and balance • Exploratory play: using physical skills and their senses to find out what things feel like and what can be done with them • Manipulative play: involves practising and refining motor skills • Constructive play: building something using natural and manufactured materials	• Pretend, dramatic, make-believe, role, and fantasy play • Early literacy and numeracy • Small world play • Socio-dramatic play

Figure 4.10 Categories of Play (National Council for Curriculum and Assessment 2009a, p. 54)

According to the NCCA (2009a), physical play is used to refer to physical, exploratory, manipulative, and constructive play and pretend play is used to refer to pretend, make believe, dramatic, socio-dramatic, role, fantasy, and small world play.

Snowdrop, the fourth class teacher, observed the mixed approach of "*play and learning*" during FS and highlighted the importance of returning to the forest every week for "*growth*" and "*improvement*" in the learning experience. Playful learning, according to Snowdrop, provided the children with a connection to the natural environment as "*it was their space in the woods, it was their playground*" (Snowdrop, fourth class teacher). Observations of learning through play are structured under headings of: Creative Play; Games with Rules; Language Play; Physical Play; and Pretend Play in the following sections.

Creative play was observed by CTs and noted by the children during their semi-structured interviews. Sparrow, a child in fourth class, noted his engagement with creative play through the use of paint:

> Researcher: *"Ok, you enjoyed that, and erm, what other things did you make and do in Forest School?"*
>
> Sparrow: *"I made the necklace."*
>
> Researcher: *"You make the necklace with the bowsaw?"*
>
> Sparrow: *"Yeah, and I painted it."*
>
> (Sparrow, fourth class child)

Children outlined the incorporation of clay in FS each week (Bay and Raine, senior infants; Holly, Jasmine, Petal, fourth class; Fern, fifth class).

> Researcher: *"Ok, and is learning in forest schools different to how you learn in your classroom?"*
>
> Holly: *"Yes"*
>
> Researcher: *"What's different about it?"*
>
> Holy: *"Inside school we sit down on our chair, and we learn Irish and Maths and everything else, but in Forest School we get to learn how to make a fire, we get to climb trees, we get to make swings and we get to make clay sculptures."*
>
> (Holly, fourth class child)

4.2.5.2 Games with Rules

Games with rules, namely nature-based chasing games, were observed throughout every FS session. These included "Owl Eyes", "Foxes' Tails", "Bug Tag", and "Fire in the Forest". Dandelion, a senior infant CT, outlined that FS involved *"learning through games"*, and Snowdrop, the fourth class teacher, commended the use of games with rules during the FS sessions: *"I thought the games were lovely"*. The researcher observed children create their own chasing games with rules and play

"tug of war" using the rope from the blind-fold trail (senior infants, 19 Mar 2019). In addition to this, children from fourth class built bridges and played "hide and seek" around shelter building activities (fourth class, 19 Mar 2019). Children in senior infants reflected that they *"enjoyed playing games"* (senior infants, 12 Feb 2019), and Raine (senior infant child) noted that he *"was playing… my friends' games"* during his semi-structured interview.

4.2.5.3 Language Play

Language games, namely "The Magic Apple" (second class, 25 Sep 2018), "Electric Finger" (fourth class, 12 Feb 2019) and "Nature Names" (senior infants, 05 Feb 2019; second class, 11 Sep 2018; fourth class, 05 Feb 2019; fifth class, 11 Sep 2018) were observed during the FS sessions. Heather, a senior infant CT, noted an improvement in children's language skills and observed an increase in the amount of vocabulary used during child-led roleplay scenarios.

> *"I guess one of the things that I definitely noticed was at the beginning of the year we found out that trying to get the language out of the children, or trying to get them to engage in roleplay, to play imaginatively, and then we were kind of like, 'is it that they don't have the vocabulary?' …but when you see them in this setting, when you just let them off, they actually have it."*

(Heather, senior infant CT)

4.2.5.4 Physical Play

According to Snowdrop (fourth class teacher), the forest had:

> *"All the textures, the sights, so the brains were buzzing, they were learning new skills, the whittling, the climbing, seeing [the Special Needs Assistant (SNA)] make the swing, working with the dyes from the plants, and so many of them have never played in water, never played in a stream and that was a huge buzz for them."*

(Snowdrop, fourth class teacher)

Physical play was observed as children moved across the rough terrain of the forest floor: "the children balance on the stones to cross the stream" (second class, 16 Oct 2018) and engaged in activities, namely the blindfold trail (senior infants, 19 Mar

2019; fourth class, 19 Mar 2019) which required balance and co-ordination skills. Dandelion, a senior infant CT, outlined that when children climbed the tree *"they had to make a plan, such as, if I put my foot here will I be able to reach up to this branch?".* The forest provided a stimulating environment to engage the children's senses: "the Forest School Leader and children note and explore how the forest is waking up and becoming alive" (Researcher observation, senior infants, 30 Apr 2019) and the FSL encouraged the children to use their "deer ears" to isolate the senses (fifth class, 11 Sep 2018). Exploratory play occurred during the blindfold trail (senior infants, 19 Mar 2019; fourth class, 19 Mar 2019) and Snowdrop, the fourth class teacher, was observed reminding the children to engage their senses while navigating their way along the path: "the CT reminds the children of the senses they have learned in the classroom that they can use during the trail" (Researcher observation, fourth class, 19 Mar 2019). Moreover, during a reflective closing circle, two fourth class children, River and Sno, outlined their enjoyment in "exploring" the woods (05 Feb 2019). Lily and Saffron, two fifth class children, also outlined the joy in freedom to explore: *"I like that way that like erm each week the boundaries move further back"* (Saffron, fifth class), *"Yeah and they, we're allowed to explore and make fires and stuff"* (Lily, fifth class). Manipulative play occurred through the use of ropes and tools such as the palm drill and the flint and steel, and Heather, a senior infant CT, outlined that *"an infant's fine motor [skills] [are] a really big thing, and that was in abundance in the forest".* The children were observed engaging in constructive play as they were "lifting branches and sticks to balance on a tree to make shelter" (Researcher observation, second class, 09 Oct 2018) and Heather, a senior infant CT, observed:

> *"When the boys were building the hut and they were doing their extension and they were trying to balance this big, long piece of wood and it kept falling over, so they had to figure out how to make that stable and they were problem solving in a way."*
>
> Heather (senior infant CT)

4.2.5.5 Pretend Play

While a reliance on play through games with rules was observed in early FS sessions, a chronological time series (Yin 2018), outlined in Table 4.1 below, demonstrates a noticeable increase in child-led, pretend play by the final week.

Table 4.1

Observation of Play over a Period of Seven Weeks

Class	Senior Infants	Second Class	Fourth Class	Fifth Class
Week One Observation	Chasing game "You're Only Safe If…" and "Eagle Eye"	The children play "Foxes' Tails" chasing game	The children participate in the chasing game "You're Only Safe If…"	The children play "Foxes' Tails" chasing game
Week Seven Observation	A roleplay game occurs at the camp area. The game is called "Hello Neighbour" and the children explain that this is where they sneak into each other's houses and take things without the owners catching them.	Rowan and Jasper are playing a shooting game with sticks down by the stream. Ruby and Huck are playing their own imaginative game which involves running and climbing trees.	River and Sparrow play hide and seek/tag together. Birk and six other children play tag. He chooses the child who is "on" by using the rhyme from the opening circle.	Elm tells the Forest School Leader that he wants to play "the ten seconds game". He explains that in this game there are three objects that that child must tag before the person who is on sees them. This is incorporated into the Forest School session.

Heather, a senior infant CT, was concerned that the children in her class lacked imagination prior to FS, however, she observed roleplay scenarios which reflected the children's lived experience:

"It's not like they're lacking in imagination, they actually have it, but just in the classroom setting when we're looming over them it's not as natural or free, and definitely at loads of different points the girls were over at this tree and it was you know it's all kind of mirroring what they know, but the mum was watching tv, and the girls were sneaking out to go, I don't know where they were going, so when someone mentioned a boyfriend, they do, do the roleplay or the pretend play that I hadn't really seen come as natural inside the classroom."

Heather (senior infant CT)

The researcher also observed roleplay which reflected the children's lived experience, which differed from the structured play theme of "The Travel Agent" which the CT had organised in the classroom at the time of the study. In this observation (senior infants, 09 Apr 2019), Jade and Bay created an imaginary house on a tree branch and became a "dad" (Bay) and a "daughter" (Jade). Initially they were observed playing "Minecraft*"* on "PlayStations" in separate spaces in the "house". The play progressed when Jade informed Bay that "Mammy" *"said to say don't tell Daddy, but I cheated on him. She said F off"*. Bay was initially confused by this, but Jade asked, *"will I go online dating for you?"*, Bay replied that he did not *"want one of those girlfriends"*, he wanted *"a normal one"*. Jade instructed Bay *"that [he has] a girlfriend now and he must kiss them"*, to which Bay replied, *"I am playing the PlayStation now and don't want to"*.

This leads the reader to the following section, in which personal and social development skills as outlined in the Irish PSC (NCCA 1999a), observed during these FS sessions are explored.

4.2.6 Personal and Social Development during Forest School

The importance of personal skill development to support social aspects of the child's life is outlined in the specific aims of the Irish PSC, as discussed previously in Chapter Two, Section 2.3.1 (NCCA 1999a). Play-based learning, outlined previously, was attributed to this personal and social development, according to the CTs, who noted the children decided *"what they wanted to do together and how to help each other and how to integrate others into their games"* (Snowdrop, fourth class teacher).

"Children negotiated who was first and who was next, and who can join in" (Heather, senior infant CT) while they *"engaged in games"* … *"they were working together and working in pairs"* (Dandelion, senior infant CT). In addition to this, Foxglove (fifth class teacher) felt social development achievements occurred through the use of *"listening ears"* and the FSL's promotion of *"respect for one another".* He also noted how the FSL encouraged the children to listen and to speak and cooperate, *"Bluebell (FSL) [was] encouraging people to listen, to speak, that's co-operating".* The children reflected that they learned to "*always be kind to your friends"* (Marjoram, fourth class; Terra, senior infants). Poppy, the second class teacher, and Foxglove, the fifth class teacher, outlined their observations of development in social skills through collaborative learning opportunities, such as building shelters and constructing swings from rope, as Poppy outlined below:

> *"I did see a lot of the time, they were working together; 'You get this', and you know, 'Help me do that' and 'What will we do here?' … And you know when they were in the trees, they were helping each other, they weren't just off by themselves. If someone was stuck, they were helping".*

> (Poppy, second class teacher)

The researcher recorded collaborative learning during group activities while hanging boundary flags, gathering sticks to light a fire or build shelter, during structured games and activities led by FSL and CTs, namely the blindfold trail, sawing wood, creating swings in groups, taking turns on the hammock, and climbing the tree. A chronological time series (Yin 2018), outlined in Table 4.2, below, conveys changes in social skills and child collaboration during FS. Initial FS sessions demonstrate highly structured, adult-led instruction regarding behaviour expectations, and while challenges such as the children's impatience waiting for their turn to toast marshmallows were still recorded in the seventh week, there was a noticeable difference in the children's ability to collaborate overall.

Table 4.2

Social Skills and Child Collaboration Over a Period of Seven Weeks

Class	Senior Infants	Second Class	Fourth Class	Fifth Class
Week One Observation	The Forest School Leader introduces the "three R's" of respect – for the environment, themselves, and each other	The children climb on rocks and jump off together. Jasper upset leaving the woods.	The Forest School Leader encourages the children to look over their shoulders to ensure everyone is included in the circle.	Not observed
Week Seven Observation	The session opens with a circle-time song and game. Olive says that she is grateful for the people who play with her. The class put up the boundary flags together. Some children find it challenging not to shout where children are hiding when they have been caught in the "eagle's nest".	Brooke, Summer and Lark could not wait for their turn to melt marshmallows over the fire and ate them before they got to toast them.	River and Sparrow play hide and seek/tag together. Jasmine and Magnolia make form from clay together. Sage and the Special Education Teacher push Aspen in the hammock. Rose and Marjoram cut wood with the Forest School Leader and Special Needs	Elm is allocating specific jobs to children (collect certain type of logs/sticks/leaves) during shelter building. The children making the swings work collaboratively. The children on the hammock take turns themselves without an adult present to say who is next.

| | | | Assistant. Robin carries wood over for them to saw.

Birk and six other children play tag, he chooses the person who is "on" by using the rhyme from the opening circle.

Sandy swings on a rope swing made by the visiting Special Needs Assistant who attended with a class last term.

Peaches lies on a branch at the top of the tree and watches others. | |
| --- | --- | --- | --- | --- |
| | Vernon goes to join Olive and another child who are playing with clay. They say he cannot join. He sits down and joins in anyway. | | | |

While self-confidence is *"not as quantifiable",* Foxglove (fifth class teacher) observed *"children… relating conversations with adults to activities at Forest School".* Dandelion (senior infant CT) outlined that *"their self-confidence was definitely really developed",* Heather (senior infant CT) felt it was *"new experiences such as climbing*

a tree or cooking gave confidence". Poppy (second class teacher) attributed *"challenges"* such as *"climbing trees"* to an increase in perceived self-confidence:

> *"… self-confidence, like take for example, say, the tree climbing: some of the girls there, they've never climbed a tree, they've never climbed a wall I would say. And then as the weeks went on, they didn't need, they weren't like, 'Oh! I'm stuck!' They just kind went 'I'm able to do this'. And this was the same for a lot of the other stuff, 'I'm able to do this, so I'm going to try and if I get stuck, I'll think of a way' [to get down]".*

> (Poppy, second class teacher)

Snowdrop (fourth class teacher) also agreed that *"a lot of the kids surprised themselves as they did not know that they were able to do what they were doing out there"*. In addition to this, Heather, a senior infant CT, felt that FS was beneficial for children's mental health, *"to show you actually feel really good after spending two hours in the forest and it does you so good to be out and in all kinds of weather and to show that, that's almost kind of a form of looking after your mental health",* while Snowdrop (fourth class teacher) noted it promoted *"strengthening the mind and body"*.

The following section considers the role of CTs during the FS approach to learning and teaching in this study.

4.2.7 The Role of the Class Teacher during Emergent, Child-led Approaches to Learning at Forest School

Heather, one of the senior infant CTs, noted her initial apprehension regarding the introduction of an emergent, child-led approach to learning and teaching outdoors. She felt that the children had "*to get used to the idea that we weren't going to tell them what to do*" and contrasted this with dominant teaching practices in her class, in which she stated children were familiar with "*being explicitly led*". However, Heather reflected on the positive outcomes of providing choice during learning:

> *"I think the approach of setting up a few different stations and letting them, so we don't do that very often and we might have those stations set up but*

we're like 'You're Group A, you're Group B, you're Group C', 'You go there, you go there, you go there', and then you rotate, or it would be something like that. We don't often give choice, and I guess that's because we want them to have the same experiences, and you want them to try and group, and you want to observe them trying each activity, and so, it's not often where we do this and set everything up and let them decide where to go because we feel that might be very chaotic, and it might be, but definitely, having the boundary of the forest is very different to here, but it might be something that we could try to allow a bit more, so that there isn't always this kind of power struggle, 'Well I don't want to do this now' or 'What one do you want to go too?', or like 'Off you go, pick your group'".

(Heather, senior infant CT)

Heather paraphrased the children's options regarding choice in learning: "*I could go down to the stream, but the streams dried up, so I can't splash in it today. So, maybe I'll go up and climb the tree, or I'll sit in the hammock, or I'll make something with clay*" (Heather, senior infant CT). Poppy (second class teacher) also noted positive outcomes in children's learning due to this freedom of choice: "*even over the few weeks you could see them making kinda more, I don't know, problem solving decisions themselves without having to be told so".* Heather (senior infant CT) noted the importance of structured elements also, namely, that meeting at the "Guardian Tree" provided each week. However, Snowdrop, the fourth class teacher, cautioned the children's tendency to return and engage in familiar learning activities each week, observing that they *"wanted to do what they done already, again".* The researcher also observed the freedom of movement provided to children within this context during FS. A time series recorded in fifth class's seventh FS session (Yin 2018), outlined in Table 4.3, below, demonstrates this child-led choice in activity.

Table 4.3

Observations of Activity: Time Intervals from the Fifth Class, Week Seven

13:09	13:24
• **Four children making rope swing with class teacher, two of these children are collecting a stick for the seat** • **Four children making their own rope swing** • **One child in a hammock** • **Two children are whittling.** • **One child is taking the tarp down with the Forest School Leader.** • **One child is creating a skeleton.** • **Four children are climbing the tree.** • **Five children are making a shelter with the Special Needs Assistant.**	• Five children are swinging on the completed swing. • Two children and the class teacher are still completing their swing • One child (Watson) is exploring the area with the Forest School Leader. • One child is throwing a rope over a branch. • One child is in the hammock, three are pushing her. • One child is in the tree. • One child is opening the clay. • Ten children are building shelters.

Tasks facilitated by an adult, such as the making of a rope swing and shelter building, were completed in this observation, which leads us to consider the role of CTs during child-led, emergent learning and teaching at FS.

Active learning at FS was observed during children's participation in adult-facilitated, skill-based activities, namely: foraging, lighting fires, sawing wood, using palm drills, climbing trees, building shelters, and whittling. This teaching occurred through *"exploration and coming up with their own ideas"* (Snowdrop, fourth class teacher), *"while being guided"* (Poppy, second class teacher). While initial observations reading the use of the environment (NCCA 1999a) demonstrated a reliance on adult-led instruction during the first FS session, child-led emergent learning, facilitated by guiding adults, was evident by the seventh FS session. This is included in another chronological time series (Yin 2018), included in Table 4.4 below. Here, the FSL and a Special Education Teacher (SET) teacher were observed providing

suitable vocabulary to label plants and materials in the natural environment and supervising activities, namely: lighting the campfire, sawing wood, building rope swings, and creating art from found objects.

Table 4.4

Use of the Environment Over a Period of Seven Weeks

Class	Senior Infants	Second Class	Fourth Class	Fifth Class
Week 1 Observation	Conversations regarding the environment are led by the Forest School Leader. The conversation focuses on gorse bushes in the forest that are beginning to bloom.	There is a sense of excitement among the children, some are climbing trees and others are finding spiders.	The Forest School Leader is leading the conversation today to "set the lay of the land" and "ensure everyone is safe". One child, Sno, is curious about the fire and asks, "when are we cooking things?"	The Forest School Leader labels the trees in the forest and informs the children that they are connected by their mycelium network.
Week 7 Observation	Basil asks for the hammock. Olive begins to use the clay by herself, another child joins her to make "reindeers". The children are aware that the leaves are starting to grow and the Forest School Leader labels them, noting they are	Jasper says he is whistling "like a bird". Vocabulary such as "tinder" and "twigs" are taught by the Special Education Teacher and Forest School Leader.	The children choose to use the ropes, whittle, go in the hammock, use the clay, or climb the tree. The Forest School Leader labels new flowers that have grown in the forest since their last visit, to include: "holly blossoms" and	The children request to play a high interest game and it is incorporated into the Forest School session as a result. Cliff created a skeleton from natural objects found. A group of children created a swing using rope and a

	growing due to "chlorophyll".		"hawthorn flowers".	branch from the tree.
	The children taste the leaves and say that they taste like the peel of an apple.		The children are encouraged to taste the young beech leaves by the Forest School Leader.	
			The children are cutting wooden discs cookies with a bowsaw. They are using palm drills to carve holes in them. This is facilitated by the Forest School Leader.	

The following section outlines professional planning and preparation for emergent, child-led learning and teaching at FS, which considers the attainment of Irish PSC subject content objectives which were recorded in the findings of this study.

4.2.8 Planning and Preparation for Learning and Teaching during Forest School

A collaborative approach to curricular planning is advocated in the Irish PSC (NCCA 1999a). Working together, the Board of Management (BOM), schools, parent(s)/guardian(s), and the wider school community ought to consider the development of concepts and skills within each curricular subject and which assessment approaches should be suitable adopted (NCCA 1999a), as detailed in Chapter Two. This collaboration began when the FSL met CTs ahead of the introduction of FS. During this meeting Heather (senior infant CT) and Poppy (second class teacher) voiced their concerns regarding behaviour management procedures, as recorded in the researcher memo:

> "The co-ordinating teacher…. questioned which behaviour policy to follow: the Forest School one? or the school's one?"

> (21 Jun 2018)

A decision was made to follow the school's behaviour policy during FS. However, contrasting expectations were noted in the researcher's memo (06 Sep 2018) when the second class teacher, Poppy, wished to continue to use of a token economy reward and sanction program ("Class Dojo") during FS. This differed from the FSL's approach to mirroring and discussion of behaviours she had learned during FS CPD. Poppy revisited these concerns during her semi-structured interview: "*I remember the first day, I was going 'Oh my God', because the class, they are quite a difficult, behaviour wise, they are quite a difficult class, and they have been since they started in the school*". She outlined her concerns regarding the "*control*" of the children's behaviour as she feared they would "*not listen*" as they "*were running in all directions*" and was surprised that the children respected the boundary flags around the camp perimeter. Poppy (second class teacher) stated that she was unsure of her role regarding behaviour management during FS at this time. Snowdrop (fourth class teacher), also highlighted her confusion regarding behaviour management strategies during FS and she felt that the onus on was the FSL to lead this.

The CTs questioned how to incorporate FS in their planning during this initial meeting also, as noted in the researcher memo: "they [the CTs] want to be able to 'stand over' the initiative [FS]. They noted that they like 'a checklist to mark off what they taught for accountability'" (21 Jun 2018). A general overview of learning was provided by the FSL, as included in Appendix K.4. However, the Snowdrop, fourth class teacher, outlined that if FS *"was long term we probably would need to discuss it with [the Principal] or across the board or how we'd work it into the plans",* but she felt this was *"easily done".*

The following sections consider the subject content objectives that were achieved, or partially achieved during this study.

4.2.8.1 Attaining the Irish Primary School Curriculum's Learning Objectives during Forest School

Findings are structured under strands, strand units/elements, broad objectives, content objectives/learning outcomes, and concepts and skills of subject areas within the Irish PSC, as detailed in Section 2.3.3 (NCCA 1999a; 2016), and outcomes of Aistear: The Early Childhood Curriculum Framework (NCCA 2009a), detailed in Chapter Two, Section 2.3.4.2.

4.2.8.1.1 Physical Education

The PE curriculum consists of six strands of Athletics, Dance, Gymnastics, Games, Outdoor and Adventure Activities, Aquatics (NCCA 1999j), and the following strand units:

Athletics	Dance	Gymnastics
•Running •Jumping •Throwing •Understanding and Appreciation of Athletics	•Exploration, Creation and Performance of Dance •Understanding and Appreciation of Dance	•Movement •Understanding and Appreciation of Gymnastics

Games	Outdoor and Adventure Activities	Aquatics
•Sending, Receiving and Travelling •Creating and Playing Games •Understanding and Appreciation of Games	•Walking •Orienteering •Outdoor Challenges •Understanding and Appreciation of Outdoor and Adventure Activities	•Hygiene •Water Safety •Entry to and Exit from the Water •Buoyancy and Propulsion •Stroke Development •Water-based Ball Games •Understanding and Appreciation of Aquatics

Figure 4.11 Physical Education Curriculum Strands and Strand Units (National Council for Curriculum and Assessment 1999j)

Achievement of PE curricular learning objectives were observed by the researcher most often during FS. However, achievements in strands of Athletics, Gymnastics, Games, and Aquatics were influenced by the availability of resources and child-led

exploration, rather than planned activities in which the explicit teaching of fundamental movement skills (FMS) occurred. Progression in Outdoor and Adventure Activities skills were evident for fourth and fifth class. Children outlined that they learned *"survival skills"* (Rocky, fifth class; Lily, fifth class) and *"about nature"* (River, fourth class; Marjoram, fourth class; Birk, fourth class; Petal, fourth class; Lily, fifth class; Saffron, fifth class). Examples of achievements included running and jumping across different terrain (Athletics, senior infants; second class; fourth class; fifth class), throwing a rope over a branch to construct a swing (Athletics, senior infants; second class; fourth class; fifth class), jumping from a height (Athletics, second class; fourth class; fifth class) balancing across different terrains (Gymnastics, senior infants), balancing on tree stumps and swinging from branches (Gymnastics, second class; fourth class; fifth class), creating and playing games, namely: "Eagle Eye" and "You're Only Safe If…" (Games, senior infants; second class; fourth class) and "Foxes' Tails", "Fire in the Forest" and "Bug Tag" (Games, second class; fifth class), and the children's own game of "ten second rule game" (Games, fifth class), walking to and through the forest, moving across streams and ditches, climbing over boulder rocks and under fallen trees (Outdoor and Adventure Activities, senior infants; second class; fourth class; fifth class), carrying branches to create a shelter (Outdoor and Adventure Activities, second class), navigating ways back to camp using the environment and landmarks (Outdoor and Adventure Activities, fourth class), and creating an outdoor swing using the correct knot typing procedures (Outdoor and Adventure Activities, fifth class).

4.2.8.1.2 Literacy

The Primary Language Curriculum (PLC) consists of three strands: Oral language, Reading, and Writing, and three elements: Communicating, Understanding, and Exploring and Using (NCCA 2016). Learning outcomes are situated within each strand and element, as illustrated below:

Figure 4.12 Strands, Elements, and Learning Outcomes of the Primary Language Curriculum (National Council for Curriculum and Assessment 2016)

Literacy (English, Oral Language) was the second most common curricular area in which achievements were observed by the researcher. Aspects of Communicating were achieved through games and the use of "deer ears" and "owl eyes" with senior infants, and with second class during a response to the story of "The Magic Apple". Fourth class developed communication skills whilst listening and following directions during the blindfold trail, and Social Conventions and Awareness of Others was observed during a discussion regarding cooking traditions across a range of cultures.

The stimulating environment of the forest offered new vocabulary of *"gorse"*, *"beech"*, *"birch"*, *"moss"* (senior infants), *"beech nut"* (second class) and activities involved the acquisition of words such as *"tinder"*, *"boundaries"* (senior infants) and *"palm drill"* (second class). Exploring and Using Language occurred during games, circle time, and during activities such as fire lighting and observations of the forest environment (senior infants; second class; fourth class). Lower and higher order questioning, such as "*how would we make fire*?" and "*why are leaves green*?" were asked by Bluebell (FSL). Children asked questions such as: *"what animals live in this forest?"* (18 Sept 2018, second class). However, Gaeilge (Irish) learning opportunities were limited and included emergent incidental vocabulary, rather than the use of phrases and conversation. While aspects of literacy were extended for senior classes, such as the discussion of mycelium networks and periphery vision, many literacy-based learning experiences were similar across class levels. Elements of literacy, including Reading (in both English and Gaeilge (Irish)) and Writing in Gaeilge (Irish), were not achieved in this study.

4.2.8.1.3 Social, Environmental and Scientific Education

There are four strands: Living Things, Energy and Forces, Materials, and Environmental Awareness and Care in Science (NCCA 1999e). The number of strand units increase in middle and senior class levels, all of which are outlined in the following Figure 4.13.

Living Things	Energy and Forces	Materials	Environmental Awareness and Care
• Myself/Human Life • Plants and Animals/Plant and Animal Life	• Light • Sound • Heat • Magnetism and Electricity • Forces	• Properties and Characteristics of Materials • Materials and Change	• Caring for my Locality • Environmental Awareness • Science and the Environment • Caring for the Environment

Figure 4.13 Science Curriculum Strands and Strand Units (National Council for Curriculum and Assessment 1999e)

The strand of Living Things was accommodated through labelling plants and animals in the forest (senior infants; second class; fifth class) and recognising characteristics such as the tree bark (fourth class). Furthermore, the fifth class learned that the identified mushrooms were part of a large mycelium network in the forest. Elements of the strand Energy and Forces were achieved through an exploration of fire to create heat (senior infants) and the impact of heat on plants and animals (second class; fifth class). Aspects of the strand Materials was attained through sorting suitable wood for sawing and lighting a fire (senior infants; second class). Children in senior infants were encouraged to resist breaking branches in the strand of Environmental Awareness and Care, while children in second class were taught to care for living things (an earthworm). Observations of the use of the environment occurred during foraging of birch peelings for fire kindling (senior infants, 19 Mar 2019; fourth class, 19 Mar 2019) and the naming of nettles and gorse flowers plants used in pancakes, labelling of trees, birds and creatures (senior infants, 05 Feb 2019; 12 Feb 2019; 19 Mar 2019; 30 Apr 2019; second class, 11 Sep 2018; fourth class, 30 Apr 2019) during structured game play. In addition to this, children were observed exploring creatures found under rocks (senior infants, 26 Mar 2019), climbing over and swinging from a fallen tree (senior infants, 12 Feb 2019), playing with found items such as beech nut shells (second class, 09 Oct 2018), creating prints from berries and flowers (second class, 25 Sep 2018, 02 Oct 2018; fifth class, 25 Sep 2018; 02 Oct 2018) learning about mushrooms and the mycelium network in the forest (fifth class, 18 Sep 2018), and using structures in the environment to play hide and seek (second class, 02 Oct 2018; fourth class, 19 Mar 2019; 09 Apr 2019; 30 Apr 2019; fifth class, 09 Oct 2018).

There are three strands of Human Environments, Natural Environments and Environmental Awareness and Care in Geography (NCCA 1999d), and the number of strands units increase with curriculum level, similar to Science, which are illustrated below in Figure 4.14.

Human Environments	Natural Environments	Environmental Awareness and Care
•Living in the Local Community/People Living and Working in the Local Area •People Living and Working in a Contrasting Part of Ireland •People and Places in Other Areas/People and Other Lands •County, Regional and National Centres •Trade and Development Issues	•The Local Natural Environment •Land, Rivers and Seas of My County •Rocks and Soils •Weather/Weather, Climate and Atmosphere •Planet Earth in Space	•Caring for My Locality •Environmental Awareness •Caring for the Environment

Figure 4.14 Geography Curriculum Strands and Strand Units (National Council for

Curriculum and Assessment 1999d)

Elements of the strand Natural Environments were observed in senior infant Geography, as children noticed the changes in the forest each week. This strand was also recorded in second class, as children questioned the growth of mushrooms and explored the need to light a fire in response to the cold winter weather. Fourth class became aware of the landscape during the blindfold trail and were encouraged to notice the impact of weather on tree growth in the forest. Fifth class identified native animals, trees, birds, and creatures during a game of "Fire in the Forest". Impacts of forest fires on the landscape were also discussed. Aspects of Environmental Awareness and Care curricular objectives were achieved in senior infants as children were encouraged to care for their locality by removing any waste (food wrappers) from the camp area. Marjoram (fourth class child) also outlined that she learned *"never throw rubbish around".* Second class learned to respect all living creatures during their FS sessions and "respect for the forest" was included as one of fourth and fifth classes' rules for behaviour. Moreover, fifth class were encouraged to question if the sycamore tree could survive after they removed a branch.

History strands develop from Myself and My Family; Change and Continuity; and Story in junior class levels to strands of: Local Studies; Story; Early People and Ancient Societies; Life, Society, Work and Culture in the Past; Eras of Change and Conflict; Politics, Conflict and Society; and Continuity and Change Over Time at senior class level (NCCA 1999c). A choice of strand units is presented within each of these strands which schools and teachers incorporate in planning, as appropriate (NCCA 1999c; 1999m). Discussions regarding the appearance of the forest throughout time (second class) contributed to the strand of Change and Continuity in History. Questioning regarding an old wall in the forest was initiated by a SET with fourth class.

> "William (SET) asks: *'Can anyone see a wall?'* He tells the children that it's an old wall, and questions if there was a forest here long ago? He tells the children that archaeologists would research this".

> (12 Feb 2019).

The fourth class teacher, Snowdrop, created connections with the strand of Early People and Ancient Societies as she compared the hammock in FS to the ones used by the Sioux Indians which the class was exploring at the time (26 Mar 2019). Life, Society, Work and Culture in the Past strand objectives were partially achieved during discussions regarding cooking with fire with fourth class. Learning objectives of Continuity and Change Over Time were referred in fifth class as the children were told that held roles similar to their ancestors, such as gathering firewood. History curriculum content was not achieved in senior infants.

4.2.8.1.4 Social, Personal and Health Education

Strands Myself, Myself and Others, and Myself and The Wider World, and strand units are presented in the Social, Personal and Health Education (SPHE) curriculum (NCCA 1999i), as follows:

Myself	Myself and Others	Myself and The Wider World
•Self-identity •Taking Care of My Body •Growing and Changing •Safety and Protection •Making Decision	•Myself and My Family •My Friends and Other People •Relating to Others	•Developing Citizenship •Media Education

Figure 4.15 Social, Personal and Health Education Curriculum Strands and Strand

Units (National Council for Curriculum and Assessment 1999i)

The strand of Myself was explored through healthy eating discussions regarding nettles as a "superfood" (senior infants) and the story of "The Magic Apple" (second class), fire safety (senior infants; second class; fourth class), safe tool use (second class; fourth class; fifth class), water safety (second class), safe climbing of trees (fifth class) and appropriate reactions to animals in the forest (senior infants). Moreover, children in fifth class were taught to avail of resources such as the hammock should they need it. Curricular objectives of Myself and Others were observed through peer guidance during blind fold trails (senior infants), emergent incidences during game play (second class), and use of resources (fifth class).

4.2.8.1.5 The Arts

Visual Arts consists of six strands: Drawing; Paint and Colour; Print; Clay; Construction; and Fabric and Fibre, which each contain two strand units: Making Art and Looking and Responding (NCCA 1999f). The exploration of Visual Arts strands included emergent, child-led creations in Clay (senior infants; second class), clay tree faces (fourth class), Construction of mini-beast mansions/shelters (senior infants; second class; fourth class; fifth class), an exploration of "Hapa Zome" (second class; fifth class) and oil pastels under the strand of Print (fifth class), and the creation of skeletons from natural items (second class), sawing wood, and whittling in Fabric and Fibre (senior infants; second class; fourth class; fifth class).

There are three strands in Music: Listening and Responding; Performing; and Composing (NCCA 1999g). Strand units consist of Exploring Sounds; Listening and Responding to Music (Listening and Responding), Song Singing; Literacy; and Playing

Instruments (Performing) and Improvising and Creating; and Talking About and Recording Composition (Composing). All curricular achievements in Music occurred under the strand Performing, specifically Song Singing. Senior infants performed songs "Fire, Fire" and "I am Awake, I am Alive" call and response. Second class performed "When Autumn Comes". Fourth class performed "I am Awake, I am Alive" also, while strands and strand units of the Music curriculum were not achieved with fifth class. Musical elements, as outlined in the PSC were not explicitly taught to senior classes.

4.2.8.1.6 Mathematics

The current mathematics curriculum includes strands of Classifying; Matching; Comparing; and Ordering as Early Mathematical Activities for junior infant classes (NCCAb; NCCAk). Early Mathematics Activities of classifying suitable sticks to use in the fire, comparing sticks for tinder, and ordering of sticks by size, were achieved in senior infants. Second class counted to forty during a game of "Hide and Seek". However, no Mathematics curricular strands of Number; Algebra; Shape and Space; Measures or Data were achieved in fourth or fifth class.

The potential to teach all curricular subjects during FS was noted by junior class CTs Dandelion (senior infant CT) and Poppy (second class teacher), while Heather (senior infant CT), Snowdrop (fourth class teacher) and Foxglove (fifth class teacher) outlined the possibility for a deeper integration of Gaeilge (Irish) through additional reflective writing activities and story-telling techniques. Snowdrop (fourth class teacher) also felt that there was potential to explore the history of the forest through story. In addition to these curricular subjects, Heather (senior infant CT) noted further opportunities for gross and fine motor skill development. Extra-curricular content, namely: cooking was also suggested by Foxglove (fifth class teacher). There were conflicts in these opinions however, as Snowdrop (fourth class teacher) felt that "*just doing lessons in the woods*" did not represent the underlying ethos of the FS approach. Moreover, Foxglove (fifth class teacher) outlined that while fifth class literacy content was not explored, he stated that there was enough time to work on subjects like literacy "*within the confines of the classroom*". In contrast, he did note that it may be beneficial to incorporate poetry readings and writings

during FS sessions. In addition to the curricular subject content objectives, Dandelion and Heather (senior infant CTs) observed problem-solving learning opportunities that occurred during experiential activities, as Heather noted the children "*experienced the seasons*", rather than learning about them from an abstract source, such as a book. This learning experience changed Poppy's (second class teacher) perception regarding the integration of curricular subject objectives, as she noted:

> "*Before we did this, I wouldn't have even thought Art would have come into it really, because you are kinda thinking art is an indoor activity and your paper and your paint or your plate, it's done indoors. And then to be outdoors, like incorporating it with science, minibeasts and all the different things that we done*".

(Poppy, second class teacher)

Overall, Foxglove, the fifth class teacher, observed the least number of curricular subject objectives attained and this correlated with the researcher's observations. In addition to this, some fifth class children outlined that due to a lack of organisation of collaborative working groups, not all children were provided with opportunities to use FS tools.

4.2.8.1.7 Aistear: The Early Childhood Curriculum Framework

Learning goals as arranged within Aistear: The Early Childhood Curriculum Framework's (NCCA 2009a) themes of Well-being, Identity and Belonging, Communicating, and Exploring and Thinking were included on the senior infant Curricular Subjective Grid also, of which an excerpt is included in Appendix D.1. Learning goals from the theme Well-being were worked towards through the use of safe tree climbing and fire lighting practice. Discussions regarding "respect" for themselves, and healthy eating habits also achieved elements of Well-being learning goals. Identify and Belonging learning goals were achieved as each child was provided with a "nature name" and included in the process of fire-making by adding his/her own stick to the fire. A sense of group identity was developed during collaborative problem-solving activities such as throwing ropes over large branches. The children saw themselves as capable learners during self-initiated roleplay. Elements of

Communicating learning goals were achieved through games "You're Only Safe If…", "Eagle Eye" and the use of "deer ears". Children also contributed aspects of FS they were grateful for in the closing circle each week. Exploring and thinking learning goals were observed during the placement of forest boundary flags, the blindfold trail, and small group explorations with the FSL. Children were also encouraged to observe changes in the forest each week, and questioning was facilitated when items, such as dog hair, were found in trees.

The following section will consider assessment methods utilised during FS, as observed by the researcher, and noted by participants in this study.

4.2.8.2 Assessment Of and For Learning during Forest School

While no formal assessment *of* or *for* learning was recorded during FS (NCCA 2007), each child was encouraged to self-reflect on activities he/she had enjoyed at the end of each session. *"The children represented their mood with their hands during the closing circle and shared their gratitude with the forest"* (19 Mar 2019, fourth class). In addition to this, self-assessment during risk-taking activities was encouraged by the FSL, as the children agreed safe heights to climb trees (26 Mar 2019, fourth class; 16 Oct 2018, fifth class), and made a class-based agreement regarding the number of children allowed in the hammock at any given time (16 Oct 2018, fifth class). Child self-assessment during specific tasks, namely: building shelters, whittling, and lighting of a fire, was also observed by the researcher and CTs. Poppy (second class teacher) felt the children were provided with responsibility while they were engaged in activities, such as climbing trees, and had to self-assess during FS:

> *"They [the children] were given a lot of responsibility to judge what would they do- even the climbing of the trees, eh, they definitely kind of thought about it more themselves and they go 'Oh, I'm stuck now, so I need to start making my way down', whereas if there hadn't been, you know if you just brought in eh one or two of them to the woods and said climb the tree there, they would probably just keep going".*

> (Poppy, second class teacher)

Foxglove (fifth class teacher) also noted observations of child-self assessment during FS activities:

> *"If they [the children] have a swing that doesn't work, they need to go and rebuild it. Erm and you know, if it is an activity they are working on… they are always trying to assess did this go well? Did it not go well?"*

(Foxglove, fifth class teacher)

One of the senior infant CTs, Heather, provided children in her class with an opportunity to self-reflect on their learning during the FS sessions, should they wish, during allocated Aistear: The Early Childhood Curriculum Framework (NCCA 2009a) time in the mainstream classroom, as the weather had impacted on their ability to complete pedagogical documentation in the forest that day. She provided the researcher with these drawings during the semi-structured interview. Some of the children created line drawings that illustrated learning through structured game play in "Eagle Eye" and the creation of nature names during circle time, while others other depicted imaginative play-based approaches in seeking permission from the "Guardian Tree" to enter the forest, as included in Figure 4.16.
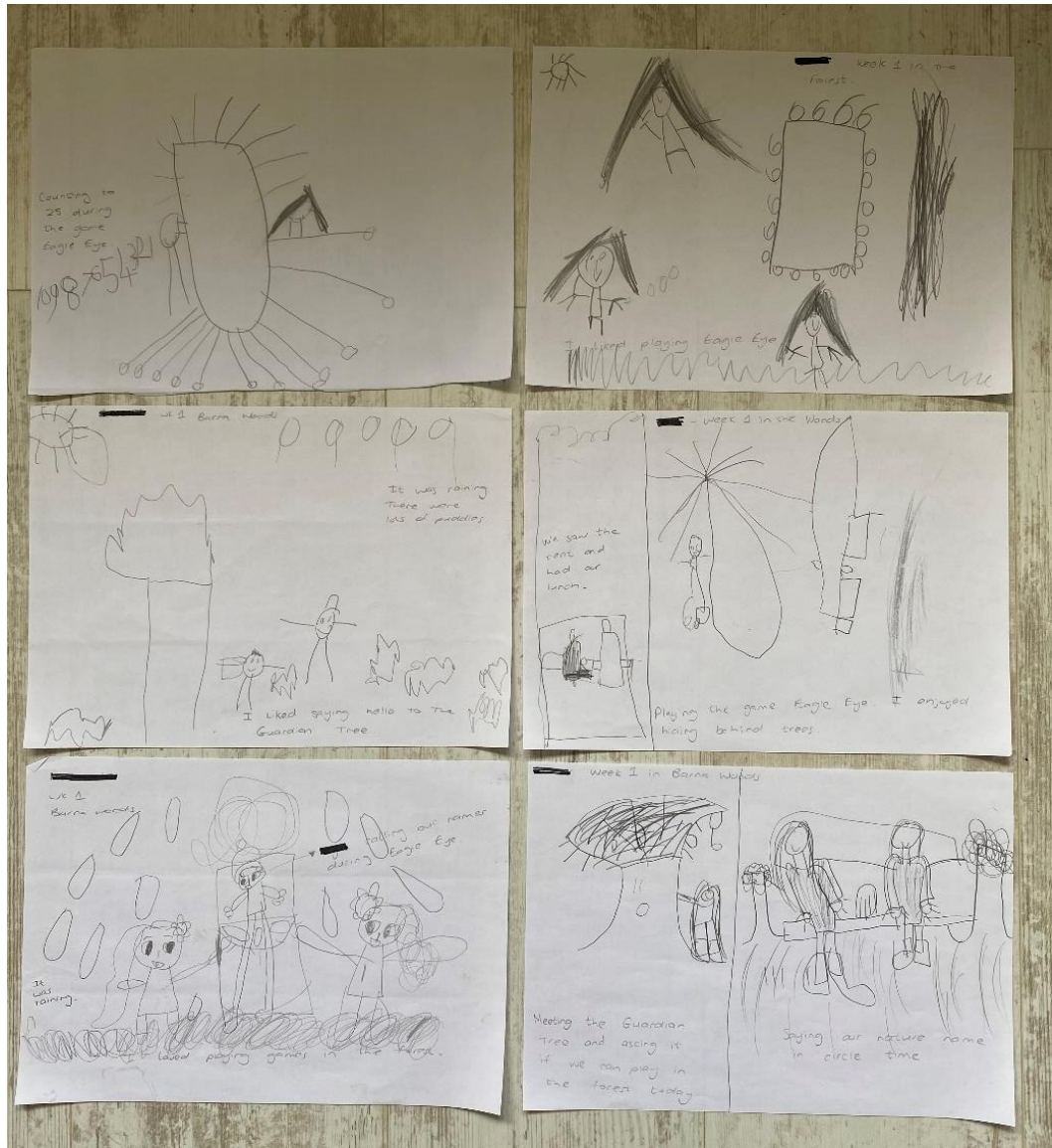
Figure 4.16 Senior Infant Children's Drawings Depicting Learning at Forest School

While Poppy, the second class teacher, noted that questioning as an assessment method occurred:

> *"There was a lot of questioning going on, you know, throughout the thing (FS): 'How did you do that?', 'How did you know?' You know there was a lot of questioning erm and even at the end, Bluebell (FSL) always kind of, we all stood around in our circle and it was kind of like, 'What did you learn?', or 'What did you enjoy?' and she'd always have a few questions for them about what we had done. Like there wasn't say, your formal test given or anything,*

but I'd say through a lot of questioning, the kids then, they were discussing what they done. And even with you, they were chatting and like even, because we had a nice number of teachers with us, there was always somebody there asking them, you know, 'Why are you doing that?' or 'Why would...?' you know all those questions."

(Poppy, second class teacher)

Heather (senior infant CT) and Snowdrop (fourth class teacher) outlined their reluctancy to incorporate teacher-led assessment strategies during FS sessions, and Heather stated:

"You know it definitely is that whole assessment trail that is taking away from actually being with them and guiding whatever they're doing or taking an interest in what they're doing. I think it's easier to do that in Forest School because you don't feel like you have to tick anything off".

(Heather, senior infant CT)

She did not see any advantage to incorporating assessment strategies during the FS sessions.

"I don't know for what purpose, because no parent came to me to ask how they got on at Forest School, so who are we reporting to… I don't know why you would put it upon yourself, I think it's just really nice as it is".

(Heather, senior infant CT)

However, Snowdrop agreed that assessment of and for learning would be necessary if FS was planned as a long-term approach to learning and teaching.

In summary, the first theme of Learning and Teaching during Forest School outlined the following findings:

- While the CTs were familiar with the FS approach, they held limited knowledge regarding the guiding principles prior to this case study. The CTs had not received formal education in outdoor teaching methodologies,

however, curricular documents had provided guidance for learning and teaching outdoors.

- The CTs responded positively to the introduction of FS in their school overall. They stated that FS allowed for a focus on the child's needs in a stimulating and caring environment through high adult: child ratios which encouraged children to consider sustainable approaches to living.

- Most of the children had visited a forest before, however, few were familiar with the FS approach to learning and teaching. Most of the children enjoyed learning during FS, particularly: climbing trees, playing in the stream and using resources such as the flint and steel and the hammock.

- Teaching methodologies utilised during FS were discovery learning, active learning, guided learning, process learning, the provision of choice and play. Play as a methodology for learning and teaching was observed most often during this study. While creative, language, physical and pretend play were observed by the researcher, play occurred mainly through the use of games with rules.

- Personal and social development occurred through talk and discussion and the use of collaborative learning activities.

- Heather (senior infant CT) reflected on the positive outcomes of providing children with choice in their learning.

- Poppy (second class teacher) and Snowdrop (fourth class teacher) were unsure of their roles regarding behaviour management during FS.

- Curricular objectives were achieved most often as senior infant class level, and least often in fifth class. Learning objectives were achieved in PE and Oral Language (Literacy) most often. Elements of Science, Geography, History, Visual Arts, Music, and Early Mathematical Activities were achieved. Learning goals from Aistear: The Early Childhood Curriculum Framework (NCCA 2009a) themes of Well-being, Identity and Belonging, Communicating and Exploring and Thinking were attained with the senior infant class.

- While no formal assessment methods were planned during FS, incidental child self-assessment was observed during risk-taking activities by the

researcher and CTs Poppy (second class teacher) and Foxglove (fifth class teacher), and Heather (senior infant CT) incorporated children's learning stories regarding play during FS in her classroom practice. While Poppy (second class teacher) noted the inclusion of questioning during FS, CTs Heather and Snowdrop outlined their reluctancy to include teacher-led assessment methods, however, Snowdrop agreed that she would reconsider this viewpoint if FS was planned as a long-term approach to learning and teaching.

4.3 Theme Two: Challenges of Learning and Teaching Outdoors in the Context of the Irish Primary School Curriculum

While participants' perspectives seem overwhelmingly positive thus far, interview questions inviting critique of the FS learning approach: "*Was there anything you might not have liked about Forest School?*" (children) and *"What recommendations would you make for the implementation of sessions in a primary school?"* (CTs) elicited additional perspectives (Miles and Huberman 2019). Furthermore, organisational issues such as securing suitable insurance cover, gaining permission to use land, and issues regarding suitable planning for learning and teaching, as outlined in the Irish PSC, were apparent in researcher observations. Thus, this second key theme explores challenges of learning and teaching outdoors in the context of this study, which are structured under the headings of Organisation Challenges of Learning and Teaching Outdoors Encountered, The Need for Parental Understanding of and Involvement in Forest School, and Professional Planning and Collaboration.

4.3.1 Organisational Challenges of Learning and Teaching Outdoors Encountered

Collective insights provide information and direction for strategic organisational planning, which ought to be considered for an effective implementation of the Irish PSC (NCCA 1999a). This section outlines participants' and researcher insights gathered during this study regarding organisational needs for FS in the Irish PSC, specifically in the areas of transport costs, insurance cover, permission to use the land, and suitable clothing for Irish weather conditions.

4.3.1.1 School Location and Transport Costs

Heather, one of the senior infant CTs, and Snowdrop, the fourth class teacher, outlined the challenge of funding and costs involved in facilitating FS in the Irish primary school. Heather noted the necessity for a bus to transport children to the forest due to the location of this school.

"You know, it is something that you would ideally love to carry on, but there's the cost of the bus, that if we were situated close to XXXXXX woods, and like wouldn't that be so ideal, and you see the Steiner school going up and down, and you don't have to factor in anything, and there's no extra cost, you're just there".

(Heather, senior infant CT)

4.3.1.2 Insurance Cover

Issues regarding insurance cover were outlined throughout the researcher memo and an excerpt is included in Appendix C.2. The insurance cover required for FS included:

1. Forest School Leader's bush skills specific cover
2. School cover which stated Public Liability of €6,500,000 to include specific indemnity in the name of [the specific] City Council.
3. If there was an employed person- employer's liability insurance of €13,000,000 to include a specific indemnity in the name of [the specific] City Council.

However, at the time of this study, the only suitable insurance policy that the FSL could secure was through an English (United Kingdom (UK)) company. As a result, the company was unable to list indemnity in the name of an Irish city council and cover had to be sought from the school's insurance company.

4.3.1.3 Permission to Use Land

Further to the insurance issue outlined previously, the city council refused permission to use land for the purpose of FS until specific indemnity to the city council was issued. Delays in processing the school's insurance company documentation resulted in a deferral of the first FS session, which occurred on the

school grounds instead. This process had to be completed for each term, and while the application was completed earlier for term two, the city council required an email from the principal to confirm that the FSL was associated with the school. The FSL also sought permission from the Woodland Conservation as this forest was located in an area of conservation. This application required:

1. A Programme of Event Management: which includes a detailed description of the event, contact details of the organisers, any other organisations involved, the number of participants, props required, and dimensions of any marquees used.
2. A Risk Management and Safety Statement
3. A Litter Management Plan
4. Insurance cover

4.3.1.4 Inclement Weather Conditions and Suitable Clothing

Heather (senior infant CT) felt that FS promoted outdoor learning and teaching, regardless of the weather:

"That's the beauty of Forest School: when they [the children] are prepared and they have all the gear, you're saying, 'Yeah, it's a rainy day but we're still going to have just as much fun'. I like that it pushes them out and also all sorts of weather, and they don't get stuck into saying, 'Oh no, it's too wet outside' or, 'It's not a nice day, we just won't bother'".

(Heather, senior infant CT)

However, seven children from fourth class listed "rain" as an aspect of FS that they did not enjoy (Aspen, River, Flo, Coral and Petal, Magnolia and Rosemary, fourth class).

Coral: *"It's kind of better I would say in the forest because it's nature, but it's not really good outside learning here when it's raining 'cause you can't really listen."*

Petal: *"And you get real cold out here"*

Coral: *"At school, if it's raining, you are in the classroom"*

229

Raindrops featured in senior infant children's drawings also, as included in Figure 4.16, Section 4.2.8, previously. Heather (senior infant CT) noted that the supply of appropriate weather-proof clothing was an issue and reflected:

> *"Then I guess for our school it was a challenge trying to get them [the children] to wear appropriate clothes, and for the first few weeks there was definitely a kind of an educating the parents as much as the kids, and if it's raining, we can't bring your kid into the woods for two hours without a coat".*

<div align="right">(Heather, senior infant CT)</div>

This issue was also observed by the researcher during the semi-structured observations as one child, Bay, in senior infants, stated, "*My mom is going to kill me because I went to the stream and now I'm soaked and this is the only thing I have to wear*" (30 Apr 2019). The two senior infant CTs addressed this need and sourced spare wellington boots (wellies) and purchased winter accessories such as gloves for the children in their class. However, Snowdrop, the fourth class CT, felt that parents of children in the junior classes may be more inclined to invest in outdoor clothing such as wellies as the children may use them to "*jump in puddles afterwards",* and she felt that the parents of the children in the senior level classes may not see the investment as something worthwhile. She did note, however, that the children who did have wellington boots (wellies) "*really felt like it was putting on armour, they felt like they could do anything in the wellies*" (Snowdrop, fourth class teacher). A need to communicating with parents was also highlighted by Heather, a senior infant CT, who stated:

> *"Then I guess for our school it was a challenge trying to get them to wear appropriate clothes and for the first few weeks there was definitely a kind of an educating the parents as much as the kids and if it's raining we can't bring your kid into the woods for two hours without a coat".*

<div align="right">(Heather, senior infant CT)</div>

The need for suitable clothing for inclement weather resulted in one child not attending a FS session (senior infants, 05 Feb 2019). This leads us to consider the importance of parental understanding and involvement in the FS sessions, as explored in the following section.

4.3.2 The Need for Parental Understanding of and Involvement in Forest School

The importance of parental involvement was included in the school's behaviour policy and was evident in practice when one child, Fennell (senior infants), ran outside of the FS boundaries:

> "Fennell hugged the FSL at the beginning of the session and the CT says she never saw him do anything like that before. Fennell stayed ahead of the class as they arrived at the FS space. When everyone arrived at camp he ran away. The CT felt that this was a result of asking him to put on his seat belt in the bus earlier. The CT, William [SET] and SNA go to attend this incident. Fennell was collected by his parents."

> (Senior infants, 26 Mar 2019)

However, Heather (senior infant CT) noted that *"no parent came to me to ask how they got on at Forest Schools",* and felt that parents would have benefitted from further information regarding the FS sessions:

> *"I think maybe just a little more information to parents about what it's about. Like the parents are so easily led by what the children say when they go home. So if we came back and it had been raining and we were cold coming back and it's like 'I'm not doing that again', and then the next Tuesday the parents come and say 'oh no, she's not gonna do it today because she doesn't want to', or whatever, without realising it's okay to be a tiny bit wet or a little bit cold, you know… I think that would actually be really good and just to show them [the parents] or if they came along side for one session just to see what it is or what they [the children] are learning, to get an understanding because I don't think they realised what it was, I think they knew the kids loved it and in general they did, we only had one or two kind of pretty wet days and that didn't even*

dampen their spirits, they still loved it and I don't think the parents fully understood what they were doing in the woods."

Foxglove (fifth class teacher) also felt that FS was something new for the children in the context of this study: *"you're letting kids run wild and climb trees which as I said doesn't happen and some parents mightn't even allow it to happen in the exact same place".* Heather (senior infant CT) also agreed that children may not be afforded this opportunity again:

"I think especially for Delivering Equality in Schools (DEIS) schools, I see the difference in my kids in the school and they're just afforded more opportunities and it's experience and it's education and like what they were saying, 'Oh that's it, we'll never come to the woods again' and that's really sad and because for a lot of them that's true, they might not make it back out to XXXXX woods even though it's only down the road from where they live and that a day out for mum, dad and the whole family and it wouldn't be, a lot of the time, I know some families that would but for most, this wouldn't be it, this wouldn't be the ideal day out and it's more like go shopping or go to McDonalds or again, get more stuff and so I think to educate the parents as well as the kids on the value of Forest Schools. We've a massive Traveller population in the school and in my class, out of the seventeen, thirteen are Travellers and we know that the issues with traveller men in depression and suicide rates, to show you actually feel really good after spending two hours in the forest and it does you so good to be out and in all kinds of weather and to show that, that's almost kind of a form of looking after your mental health."

(Heather, senior infant CT)

Snowdrop, the fourth class teacher, outlined how one child, Magnolia, asked her parents to bring her back to the forest after the FS sessions: *"Magnolia's parents started bringing her back a lot by request. Back to the woods. So, it will be interesting to know if the parents will bring them back",* she felt that *"when we know that the parents aren't bringing them [outdoors], we have to step in as the educators, you*

know, or as the other educators so that they do experience what other kids are experiencing in Ireland and around the world" (Snowdrop, fourth class teacher). However, Poppy (second class teacher) outlined a moment of confusion that occurred due to a lack of communication with parents regarding learning and teaching at FS:

> Poppy: *"The toilet was another thing. I thought that was just, it was brilliant for them! Now, I did get a parent in, it's quite a funny story. But, I got a parent in who after maybe the first week out in the woods- so Bluebell (FSL) had gone through all about it, 'so if you're camping', you know, 'that's the way you do it' and whatever."*

> Researcher: *"Yeah"*

> Poppy: *"So, two of the girls went home that day and 'free-toileted' in the back garden!"*

> Researcher: *"Oh!"* [laughs]

> Poppy: *"And came in and said, 'Oh, Ms. Poppy said it was okay for us to do that'. The mom came in and said, 'Did you tell my daughter it was okay to just go to the toilet wherever outside?'. I was like, 'No! I didn't!'. So it was quite a funny story. She understood, I explained the whole thing to her and the idea and everything, but it was quite funny because she, yeah, she came in and she was going, 'Did you tell them that?', and I was like, 'Not really, not really!'"*

Snowdrop, the fourth class teacher, noted how Marjoram, a child from the Traveller community, associated learning in the forest with her grandmother's life experiences, outlining potential connections with families in the school community:

> *"She talked about her granny and how much her granny loved the forest, and how comfortable her granny was in the woods and making fires, and she was holding onto that and associating with the granny a lot, which I thought was gorgeous, because a lot of the times when the kids talk about being Travellers, they don't talk about their time on the road. They talk about now and the way they dress differently to others, whereas Marjoram*

obviously talked to her granny and her time at the side of the road, you

know."

<div align="right">(Snowdrop, fourth class teacher)</div>

4.3.3 Professional Planning and Collaboration

Shortcomings in the attainment of the Irish PSC curricular objectives, according to participants in this study, occurred due to professional planning and collaboration issues. Concerns regarding curricular accountability and assessment were initially highlighted by the CTs during the first meeting with the FSL, as included in the researcher's memo:

Researcher's Memo Excerpt

"The Class Teachers are concerned about incorporating the Forest School sessions in their plans…. They noted that they like a checklist to mark off what they taught for accountability".

<div align="right">(21 Jun 2018)</div>

Heather (senior infant CT) felt a *"team approach"* to planning during FS would be beneficial as *"the teacher could say, 'Well look, this is a big chunk out of our whole year so what bits can we bring in, what science bits can we mix in, even for just one station of it'"* (Heather, senior infant CT). Dandelion (senior infant CT) also noted the potential to further integrate the Irish PSC curricular subjects during FS through planning, *"I especially think that if you were planning it together with someone like Bluebell (FSL), you could input specific things on your plan and they would be very easy to incorporate"* (Dandelion, senior infant CT). Foxglove also highlighted a need for more planning to include *"a full set of plans and a full schedule of the time you're doing it"* (Foxglove, fifth class teacher) to allow CTs to prepare and become involved in the leadership and management of FS sessions.

"I think, you know you could plan it out and maybe have five or six weeks of plans and say 'right, this week you're going to be doing this' and 'this week you're going to be doing this', it would give you maybe time to think about, alright, I could do this with it, or I could change it in this way".

<div align="right">(Foxglove, fifth class teacher)</div>

In addition to this, Foxglove outlined a need for planning of school staff roles during FS:

> *"I think when, if, firstly, if there's a group of adults there, use them all, like very specifically, so, erm, so I don't know if that's the way just that there would be one person leading it and everyone sort of follows, but, if I was organising it and I had three or four adults at my disposal, I'd say 'right, today you're going to be doing this, you're going to be doing this' and we would maybe have it pre-planned a little bit how, what was happening so you could put a bit of input in".*

> (Foxglove, fifth class teacher)

While the CTs had completed little or no formal CPD in outdoor pedagogy, as noted in Section 4.2.1 previously, their involvement in facilitating learning was observed throughout the FS sessions. Heather notified the FSL that she was *"eager to be involved"* on the first day (05 Feb 2019) and sought a role, Poppy and Snowdrop participated in *"nature name"* and *"nature call"* decisions (Poppy, 11 Sep 2018; Snowdrop, 05 Feb 2019). Foxglove was regularly observed playing structured games facilitated by the FSL, and there were regular observations of roles namely: leading structured games, hanging boundary flags, tending the fire, and monitoring activities of tree climbing, shelter building, or playing in the stream during FS. However, Poppy also outlined the need to create further professional planning and preparation regarding CT and FSL roles during behaviour management issues:

> *"It was difficult as well to know when should I intervene and kind of say, 'Okay, enough is enough now', and erm yeah. And there was a few incidences where some of them threw a few little tantrums along the way and you kinda go, who should make the call here? Or, someone does have to say, 'right, actually, you have to take a time out now', and then sometimes I wasn't sure, should I be doing that? or is it up to Bluebell (FSL)? It was just, we probably should have pinned all that down a little bit more at the beginning and discussed it, just because they are such a challenging bunch. So maybe that's something we could have done a bit better at the start."*

The FSL outlined that she found it difficult to maintain FS guiding principles in large mainstream class sizes (researcher memo, 25 Aug 2018), however, seven additional senior infant children were included in the infant grouping (researcher memo, 22 Jan 2019; 29 Jan 2019). Elm and Dill, two fifth class children, outlined the effects of larger numbers during the FS sessions:

> Elm: *"Sometimes it was kinda boring when we have to like stand and just like sit there and wait for everybody and stuff."*
>
> Dill: *"Yeah."*

In summary, this section outlined findings as follows:

- Heather, a senior infant CT, and Snowdrop, the fourth class teacher, outlined the challenge of funding the bus to provide access to the forest for children in this study.

- Suitable insurance policies which covered FS activities proved challenging to secure. The local city council required proof of insurance for permission to use the land.

- While Heather, a senior infant CT, felt that FS provided children with opportunities to engage in learning outdoors regardless of the weather, seven children listed "rain" as an aspect of FS that they did not enjoy and access to appropriate weather-proof clothing proved challenging in this study.

- Foxglove, the fifth class teacher, and Snowdrop, the fourth class teacher, felt that FS was such a new concept for most children in this study and Heather, a senior infant CT, noted that parents may have benefitted from further information regarding the sessions.

- Snowdrop, the fourth class teacher, Heather, a senior infant CT, Dandelion, a senior infant CT, and Foxglove, the fifth class teacher, noted a potential for additional planning and preparation in consultation with the FSL to integrate curricular objectives further during FS. Poppy, the second class teacher, felt

that she would have preferred further professional collaboration to understand her role during behaviour management issues.

- The FSL noted that it was difficult to maintain FS guiding principles in traditional primary school classes due to the ratio of children to adults. Two children agreed that this resulted in having to "wait for everybody".

4.4 Theme Three: Inclusion for Children with Diverse Learning Needs and Interests during Forest School

This third and final theme outlines findings regarding the facilitation of participants' diverse learning needs and interests during FS. Challenges to inclusive practices are also acknowledged in this section, namely the sensory input of the forest, and the impact of adult facilitation levels during FS.

4.4.1 Children's Interest in Learning at Forest School

The CTs observed and reflected on the impact of emergent, experiential, and child-led approaches to learning during FS with children who may not have demonstrated high levels of interest in school otherwise. Heather, a senior infant CT, stated that FS is *"the ideal place for the kids to learn"* as children Juniper, Basil, and Spruce, who found it *"hard to sit"* in the mainstream classroom setting, responded positively to the active, physical learning experiences.

> *You know, the boys were definitely drawn to it, well not the boys but certain boys, say Basil or Juniper, they were definitely drawn to the physical, they were 'burning off steam' building or dragging branches to make something".*

> (Heather, senior infant CT)

Poppy, the second class teacher, agreed with this and stated:

> *"I thought it was really good for that class as well, because they are quite an active bunch…. sitting in the classroom doesn't work…. there's a few of them that go out [of the classroom] regularly during the day. You know, they could be just doing work in the garden, because they can't sit for this amount, for any extended period of time".*

> (Poppy, second class teacher)

Heather, a senior infant CT, also attributed children's interest in learning at FS to the provision of choice, which she observed during one creative play activity:

> *"When we're doing clay, I'm trying to think, oh we did dinosaurs and we were all making a dinosaur and it was definitely more free and I liked how then, say Basil (child in senior infants) used twigs mixed in and leaves mixed in and it gave him a chance to be creative in a way that maybe it wouldn't have, if he did it in the classroom".*

> (Heather, senior infant CT)

Dandelion, a senior infant CT, compared the "*invitation*" for children to "*get stuck in*" and learn new skills during FS to her classroom practice of teacher-led demonstration as children "*stand back*" and watch. Instead, Poppy, the second class teacher, stated that children were encouraged to "*take control of the role of whatever they are doing and decide what to do*". As a result, Rowan, a child in second class, developed a high interest in whittling; "*it's something he's massively interested in*", "*he talks about it an awful lot and he's doing it at home*" (Poppy, second class teacher), and Heather, a senior infant CT, noted that as a result *"I don't think there was anybody just sitting and not taking part in something…. there wasn't anybody not engaged at any point"* (Heather, senior infant CT).

4.4.2 Demonstrating Abilities during Forest School

Heather, a senior infant CT, outlined that FS provided children opportunities to demonstrate abilities that may have not been apparent in the mainstream classroom setting.

> *"Vernon (child in senior infants) like, I think he really shone in the forest and how gentle and kind he is, like helping people over the wall or picking someone up if they fall, and I think it gave children like him, because in the classroom, let's say he finds it difficult, he finds writing difficult, and the same for Heath (child in senior infants) and he would really find school work hard and concentration and kind of getting to the end of an activity but, I think for those two, it gave them a chance for their little personalities to really shine and I think they both showed that they were really clever in a lot of ways, like Heath*

was into everything and he wanted to pick up a swing or build or whatever, so I think it definitely gave those children a chance to feel like they were confident".

(Heather, senior infant CT)

She stated that:

"Vernon would find it so hard to write with his pencil and his pencil grip and everything and then he's using the flint and steel, and it's that strengthening of the hand and just all those opportunities and even the pulling of the rope, it's all that and developing and strengthening your hands and upper body strength so that you are ready when it eventually comes to writing."

(Heather, senior infant CT)

Snowdrop, the fourth class teacher, reflected that Robin, a child with a diagnosis of dyslexia, and struggles with schoolwork was *"in his element"* as he was able to *"lead learning in the forest"* and demonstrate his abilities outdoors. Robin also outlined that learning during FS differed to the mainstream class *"'cause you can't get out and learn how it would be in the real world instead of like in class just looking at pictures"* (Robin, fourth class), and noted that the natural environment provided new learning opportunities, namely the use of nettles in his tea, *"I learned I could eat Beech [tree leaves] and you could eat pancakes made out of nettles and tea"* (Robin, fourth class). In addition to this, Aspen, a child awaiting a special educational needs assessment, who was described by his CT Snowdrop, the fourth class teacher, as *"awkward"*, *"quiet",* and *"afraid to make eye-contact"* in the mainstream school setting, was observed *"enjoying himself rather than… squirming in school"* at FS. *"He* (Aspen) *was running off ahead of us when we got off the bus and he couldn't get there fast enough really"* (Snowdrop, fourth class teacher). Snowdrop also explained how another child, Rose, demonstrated her abilities while climbing trees that she may be reluctant to share otherwise:

"Rose was like a fairy up there, like a queen of the tree, she was going higher and higher, and she doesn't get to show that often either because her thing is

dance and she won't dance in front of the class, whereas she could show how agile she was when she was climbing the tree."

<div align="right">(Snowdrop, fourth class teacher)</div>

4.4.3 Challenges to Inclusive Practices during Forest School

Challenges to inclusive practices during FS were also noted during this study. Firstly, Snowdrop, the fourth class teacher, highlighted some children's discomfort to stimuli in the forest. However, she stated that while these children were *"very sensitive to stimuli and they were really out of their comfort zones"*, their initial fears dissipated. Talia, a child in senior infants, outlined her dislike of nettles as *"they sting when we are walking"* (Talia, senior infants). Additional negative effects of engagement with the forest environment, namely: *"getting hands dirty"* (Savannah, senior infants), *"clothes getting dirty"* (Primrose, fifth class), *"getting wet in the stream"* (Vernon, senior infants) and *"falling"* (Jasper, second class; Juniper, Olive, Sierra and Basil, senior infants; River, fourth class) were listed by other children also. Birk, a child in fourth class, said that he did not like *"the midges"* (small insect) and Snowdrop (fourth class teacher) outlined a child's (Jasmine) upset after an insect bite. While Poppy, the second class teacher, praised the skill of toileting outdoors, Birdie (a child in fifth class) and Marina (a child in senior infants) said that they did not like using it. Snowdrop, the fourth class teacher, described Daisy, a child in her class who was also awaiting a special educational needs assessment, as "*a girl who just said she didn't like being out in the woods*" (Snowdrop, fourth class teacher). Snowdrop (fourth class teacher) observed that Daisy found the forest "*disgusting*" and disliked "*the mud, the leaves, the moss, the sounds, the water, everything*". While Daisy's CT felt she was benefitting from being in the forest, as "*she was still getting fresh air and sunlight and picking up on all the different light coming in on her*" and "*wasn't in danger*", Daisy did not engage in any activities during FS, however. Snowdrop (fourth class teacher) felt that the stimulating environment of the forest provided too much distraction at times:

> *"They did take forever to get into circles and it's much easier to do that in a classroom because there's so much distraction in the woods, they just want to*

be gone and they just want to be in the river or up the tree or do whatever you know".

<p style="text-align: right;">(Snowdrop, fourth class teacher)</p>

The following section considers the impact of adult facilitation on inclusive practice during the FS sessions in this study.

4.4.4 The Impact of Adult Facilitation on Inclusive Practice at Forest School

Elements of an inclusive learning environment were created through adult support and guidance in tasks such as the blindfold trail and lighting fires, the provision of an outdoor toilet, choice in activities, the availability of sensory resources, namely the swings and hammocks, and the provision of roles for children with limited mobility during structured games. However, contrasting levels of facilitation were observed during the FS sessions. The fifth class teacher, Foxglove, and the SNA were determined to provide a child with mobility needs with an experience of learning in the forest. They carried her wheelchair over a small stone wall and across rough terrain each week. In contrast, the children with cochlear implants in senior infants and fourth class were not permitted to bring their microphones to the forest as the school's insurance policy did not provide protection for the equipment off-campus. In addition to this, the fourth class teacher, Snowdrop, disclosed that three children had a diagnosis of autism spectrum disorder (ASD) and two other children were waiting an assessment of learning needs during the first FS session (05 Feb 2019). She had not felt this was relevant information to share with the FSL as she stated that she only thought physical needs would impact on the FS session. Moreover, a staff member's absence resulted in the exclusion of Watson, a child with ASD, who stood outside the closing circle and did not partake in class activities during the sixth FS session with fifth class (02 Oct 2018).

In summary:

- CTs (Heather, senior infants; Poppy, second class; Snowdrop, fourth class) felt children who generally lacked interest in schoolwork responded positively to active and physical learning experiences during child-led, open-ended play and exploration at FS.

- Heather (senior infant CT) and Snowdrop (fourth class teacher) outlined that FS provided opportunities for children to demonstrate abilities during new learning experiences which differed from classroom practices.

- Challenges to inclusive practice during FS included children's discomfort to stimuli in the forest, namely: nettle stings and insect bites, getting their hands dirty, getting wet in the stream, falling, and toileting outdoors.

- While inclusive practices were observed, this differed depending on the CTs' beliefs, school policy and staffing.

4.5 Conclusion

Findings which emerged from thematic analysis processes, detailed in the Methodology chapter, were outlined. Key themes of Learning With, In, and Through the Environment during Forest School, Challenges of Learning and Teaching Outdoors in the Context of the Irish Primary School Curriculum, and Inclusion for Children with Diverse Learning Needs and Interests during Forest School explored findings regarding participants' previous experiences of learning and teaching outdoors, perceptions of the introduction of FS in this school, and advice for future practice.

The first theme of Learning With, In, and Through the Environment during Forest School noted the importance of curricular documentation in providing CTs with guidance for learning and teaching outdoors previously. The FS sessions were well received by the majority of participants and CTs felt that children were provided with opportunities to engage in and with nature to appreciate the natural world through skill-based experiences. The CTs observed progressions in children's social development and language skills and use of vocabulary during emergent, child-led play. However, Heather (senior infant CT) also felt that certain structured activities, namely meeting at the "Guardian Tree" were also necessary during FS. Senior infant children's reflective drawings also depicted time during structured game play, circle-time, and meeting at the guardian tree. Issues regarding CT roles for behaviour management and the use of assessment strategies within the FS ethos were highlighted. Perceived learning outcomes include a holistic development of the child in a nurturing and stimulating environment in this study, and an increase in children's self-belief due to the provision of additional responsibilities during FS. Curricular

objectives were observed in PE, Literacy, Science, Geography, History, Visual Arts and Music and Maths, however, learning outcomes were achieved most often in the senior infant class level and least often in fifth class. The potential to teach all curricular subject strands was noted by the senior infant CTs and the second class teacher, while the fourth and fifth CTs noted opportunities for further integration of English, Gaeilge (Irish), and History during FS.

Challenges of Learning and Teaching Outdoors in the Context of the Irish Primary School Curriculum uncovered obstacles in facilitating the FS approach within the context of the Irish PSC that became apparent in this study. Issues of funding, suitable insurance policies, and permission to use land within areas of conservation were noted. Participants outlined challenges regarding harsh Irish weather conditions, suitable clothing for these conditions and unpleasant outdoor elements, namely plant and animal stings, falling and getting wet and/dirty while playing outdoors. The need for further development in areas of professional planning and preparation prior to FS sessions was also outlined. A requirement for parental understanding of the FS ethos was outlined by CTs, and inclusion of parent(s)'guardian(s) input during sessions were recommended.

The third theme: Inclusion for Children with Diverse Learning Needs and Interests During Forest School, outlined children's positive response to playful, active, and physical learning experiences during FS. These experiences provided children with opportunities to demonstrate multiple abilities during FS. However, challenges regarding discomforts with the highly stimulating forest environment were also noted. While inclusive practice was observed, it was influenced by the CTs' beliefs, school policy, and staffing.

The following chapter: Discussion of Findings, considers these themes within the context of theory and literature, as previously explored, to provide scholarly significance to the field.

Discussion of Findings

Nurturing the Seedlings

5.1 Introduction

Figure 5.1 Nurturing The "Seedlings" (Murphy 2019)

Emergent themes which have grown from "seeds" (data) in the previous chapter: Research Findings are nurtured through deep discussion as the "seedlings" (findings) continue to "grow" in this discussion chapter.

The research question which propelled this study: *"How do Children in Senior Infants, Second Class, Fourth Class and Fifth Class and their Teachers Perceive the Impact of the Introduction of Forest School Sessions on Learning and Teaching in an Irish Primary School?"* was explored through the following sub- questions:

➢ *How do the children perceive the Forest School sessions?*

➢ *What principles and subject content of the Irish Primary School Curriculum, to include Aistear: The learning outcomes of the Early Childhood Curriculum Framework, are observed during the Forest School sessions?*

➢ *How do the class teachers perceive the Forest School sessions?*

➢ *What learning and teaching methodologies, if any, do the class teachers identify as unique to the Forest School approach?*

Findings are discussed within Bronfenbrenner and Morris' (2006) Bio-ecological process-person-context-time (PPCT) Model. This discussion is strengthened through reference to previous research findings and literature to outline direction for the implementation of the Forest School (FS) approach to learning and teaching in the Irish Primary School Curriculum (PSC).

5.2 Learning With, In, and Through the Environment during Forest School

Processes of learning and teaching at FS are affected by the person and context, as the microsystems and mesosystems contain patterns of activities between the child and the teacher who assists, encourages, and engages in joint activities (Bronfenbrenner 1994; Bronfenbrenner and Morris 2006; O'Sullivan and Ring 2021). Participants' perspectives regarding FS in the context of this study is discussed in the following section, prior to an exploration of the processes of learning and teaching which occurred.

5.2.1 Participants' Perspectives regarding Forest School as an Approach to Learning and Teaching in The Irish Primary School Curriculum

While most of the children had visited a forest before, few were familiar with the FS approach to learning and teaching. This reflects current trends regarding limited opportunities for outdoor playful pedagogies and a disconnect from the natural world (Louv 2005; Mercogliano 2007). There were initial levels of anxiety towards the unknown forest environment for some children, however, most children enjoyed learning during FS, particularly climbing trees, playing in the stream, and using resources such as the flint and steel and the hammock, reflecting findings from previous studies (Ridgers et al. 2012; Maynard et al. 2013). While the CTs were familiar with the FS approach, they held limited knowledge regarding the guiding principles prior to this case study. The CTs had not received formal education in outdoor teaching methodologies, however, curricular documents had provided guidance for practice. This reflects findings from Madden's (2019) study in which concerns regarding Irish primary school teachers' outdoor educational knowledge were outlined. In this study, Madden (2019) found that Irish student teachers (ST) undergoing initial teacher education (ITE) to become primary school teachers did not feel confident in their subject knowledge relating to nature. The CTs' previous approaches to teaching outdoors included maths trails, scientific and geographical

activities, namely: collecting seeds, planting bulbs, and mini-beast hunts, which are congruent with the Irish PSC subject teacher guidelines (National Council for Curriculum and Assessment (NCCA) 1999b; NCCA 1999d; NCCA 1999e). Moreover, Aistear: The Early Childhood Curriculum Framework (2009a) provided Dandelion, an infant CT, guidance in outdoor water and sand play and the use of mud kitchens during structured play sessions. Long-term, and seasonal-based learning opportunities are advocated in the Irish PSC, and teachers are reminded to consider learning outcomes before planning outdoor lessons and avoid repetition of early year experiences (NCCA 1999d; NCCA 1999e). Snowdrop (fourth class teacher) and Poppy (second class teacher) reflected on previous experiences of gardening in the school, however, they noted that these initiatives were short-lived. Madden (2019) attributes discontinuities in outdoor education with timing issues affected by the scale of the Irish PSC and the challenge of meeting children's individual needs in multi-grade or large classes, labelled as "curriculum overload" (NCCA 2010). Curriculum overload is attributed to the subject-based structure of the Irish PSC, as outlined in Chapter Two, Section 2.3.3, which affects CTs' ability to deliver content in an integrated manner, along with factors such as additional NCCA documents, assessment requirements, initiatives, school facilities, a shortage of curricular planning time, lack of time to communicate with parent(s)/guardian(s) and the impact of legislation on school policy (NCCA 2010).

The CTs responded positively to the introduction of FS in their school overall. They stated that FS provided choice in learning which allowed children to engage in activities they enjoyed in a stimulating and caring environment which encouraged children to consider sustainable approaches to living. Thus, addressing Louv's (2005) and Mercogliano's (2007) concerns regarding children's disconnection with, and attitude towards nature as something to watch, wear, consume, or ignore, and providing children with an opportunity to engage with the United Nations (UN) Sustainable Development Goal as outlined in Chapter One, Section 1.4. However, the need for pedagogical guidance in sustainable development education is highlighted in a recent departmental report (Department of Education and Skills (DESb) 2022). Here, it is noted that the inspectorate is currently working to develop and build a

shared understanding of education for sustainable development (ESD) across early childhood education (ECE), primary, and post-primary sectors. Children and CTs reflected that learning and teaching at FS centred around the outdoors and the natural environment in which names and characteristics of flora were a focus. Learning processes utilised during these FS sessions included discovery, active, guided, process learning, and the provision of choice and play. Play as a methodology for learning and teaching was observed most often during this study. While creative, language, physical and pretend play were observed by the researcher, play occurred mainly through the use of games with rules, highlighting the need for a balance in planning proactive and intentional playful pedagogy alongside reflexive practice to enable the teacher to reconceptualise and plan play-based learning in child-centred terms (Bilton 2003; Kernan and Devine 2010; Hansen Sandseter et al. 2012; Gray 2013a; Wood 2013; Ashman 2014; Hunter and Walsh 2014; Sahlberg and Doyle 2019).

The following section considers achievement of the Irish PSC vision, aims, principles, broad objectives, subject content objectives, concepts and skill development, and assessment during the FS sessions in this study.

5.2.2 Realisation of the Vision, Aims, Principles, Broad Objectives, Subject Content Objectives, Concepts and Skill development, and Assessment of the Irish Primary School Curriculum

Processes between the child and persons, objects, or symbols occur within the context which provides opportunities, or constraints, to development (Bronfenbrenner 1995; Bronfenbrenner and Morris 2006; O'Toole 2016). This section will discuss the processes of learning and teaching which occurred within the time and context of this study.

5.2.2.1 The Vision and Aims of the Irish Primary School Curriculum

The Irish PSC vision is concerned with nurturing the needs of the child so that they can become a member of an ever-changing Irish society through learning in a stimulating environment in which social development and active involvement are included to develop the child's self-confidence (NCCA 1999a). The CTs felt that FS attained this broad, child-centred vision to learning and teaching overall. They outlined that the needs of the child were nurtured through the emotional and

physical development during learning opportunities with high adult to child ratios. Children made connections to their local natural context, while learning in an environment in which they could move and explore. Social development was achieved by playful collaboration tasks, such as shelter building and the creation of rope swings, and the FSL promoted positive behaviour and respect for one another using "*listening ears*". In addition to this, the CTs noted that all children were actively involved in creating and using their own ideas under the FSL and CTs' guidance. While Foxglove, the fifth class teacher, cautioned that self-confidence is a difficult concept to quantify, CTs felt that children's self-confidence was nurtured through overcoming challenges in new experiences such as climbing trees. Additional social development skills, such as the inclusion of others in structured games and turn-taking were observed. The CTs outlined how children were provided with opportunities to realise their potential as an individual through the use of choice and autonomy to specialise in their chosen skills. Foxglove (fifth class teacher) felt this was important in this school context as the children may not have these opportunities otherwise. In addition to this, the CTs felt that this approach prepared the children for further education and life-long learning through experiencing environmental sustainability during problem-solving activities. However, the forthcoming revised primary curriculum framework, currently in draft format, has updated this vision to include high quality teaching, learning and assessment that is inclusive, evidence-based and grounded in supporting each child to make progress in all areas of their learning and development (NCCA 2020). This updated aim demonstrates an inclusion of quality learning experiences, in addition to the development of the child's self-confidence and realisation of his/her full potential, which is explored in the following sections.

5.2.2.2 Principles of the Irish Primary School Curriculum

The attainment of the principles of the Irish PSC, as outlined in Chapter Two, Figure 2.3, during the FS sessions are considered in this section.

5.2.2.2.1 The Child's Sense of Wonder and Natural Curiosity is a Primary Motivating Factor in Learning

The importance of learning with, in, and through nature to develop a kinship and ecological understanding of the natural world occurred during these FS sessions (Cree and Robb 2021). This *"extraordinary environment"* (Foxglove, fifth class

teacher) offered *"something new and different"* each week (Dandelion, senior infant CT) in which children constructed meaning through social interactions with each other, and the natural environment (O'Brien 2009; Leather 2012; Harris 2017; McCree 2019; Cree and Robb 2021). Thus, cultivating the child's sense of wonder and natural curiosity as a motivator for learning (NCCA 1999a).

5.2.2.2.2 The Child is an Active Agent in His or Her Learning

Active learning occurred through learner-centred processes in which children were provided with choice (Forest School Association (FSA) 2018b). Snowdrop, the fourth class teacher, noted children were provided with *"experiences to explore and to choose their own, to choose what they want to do"*. This provision of choice lies within cognitivist learning theories (Schunk 2012) and is integral to the FS approach and Aistear: The Early Childhood Curriculum Framework (NCCA 2009a; French 2007, cited in NCCA 2009b; Waite et al. 2015). Dandelion and Heather, the senior infant CTs, and Poppy, the second class teacher, observed that some children had responded well to the affordance of choice in their learning, reflecting Greenwood's (2017) stance regarding the importance of choice in outdoor play. However, benefits of adult-directed guidance provided by Foxglove, the fifth class teacher, during the construction of a rope swing (16 Oct 2018) and adult-initiated discussions regarding history of the forest with fourth class, by William, the Special Education Teacher (SET) (12 Feb 2019) were observed with senior classes. Therefore, while choice in learning provided valuable learning experiences (Department of Children and Youth Affairs (DCYA) 2019) according to junior class teachers, advantages of adult-led teaching was observed with senior classes to guide tasks and ensure children achieved curricular learning outcomes and engaged in a depth of knowledge (Department of Education and Skills (DESb) 2017a). This reflects the challenge of finding a balance between adult-initiated and emergent child-led learning and teaching, as noted by Hayes and Kernan (2008).

5.2.2.2.3 Learning is Developmental in Nature

While the FSL's planning, included in Appendix K.4, outlines planned progressions in skills during each FS session, researcher observations in which school staff connected learning at FS with curricular objectives extended and developed the

children's knowledge further. These observations included William's, the SET, questions regarding cardinal directions and historical artefacts in the forest (12 Feb 2019) and connections Snowdrop, the fourth class teacher, created to the Sioux Indians, as studied in History (26 Mar 2019). Bilton (2003), Wood (2013), and Sahlberg and Doyle (2019) outline conflicts that may exist between the planning of curricular subjects taught in school and a play-based approach to learning and teaching, such as in FS. However, as Ashman's (2014) writings note, play must be guided at times to ensure learning occurs. Thus, a cyclical process of planning, observation, and reflection, sensitive to the people and objects within the space of the learning environment ought to occur during FS (Fallon, 2017; Kernan 2007, cited in NCCA 2009b). This begins with long-term planning, in which the strands and strand units of the Irish PSC are considered, while children's emergent learning is allowed for in short-term planning (Fallon 2017). Moreover, these observations consolidate Snowdrop's, the fourth class teacher, Heather's, a senior infant CT, Dandelion's, a senior infant CT, and Foxglove's, the fifth class teacher, advice regarding the need for additional planning and preparation for learning, in consultation with the FSL, to achieve curricular objectives during FS.

5.2.2.2.4 The Child's Existing Knowledge and Experience Form the Base for Learning

While planning is required for intentional pedagogy (Walsh 2017), as detailed above, emergent learning experiences can provide children with a space to create scenarios that reflect their lived experience (Fallon 2017). Initial FS sessions were highly structured in all class levels as safety measures and simple activities, such as understanding boundaries, responding to the FSL's "crow call", tree climbing, rope tying, knife use, and fire safety were outlined, however, observations of lived experience occurred during role-play. These observations included re-enactments of high-interest movies and computer games, such as "The Hunger Games", "Minecraft", "Fortnite" and "Hello Neighbour". "Observational scaffolding" (McCree 2019, p.17), a key feature of FS (FSA 2018a), can facilitate learning within children's existing experiences. This is also reflected in departmental guidance to inclusive educational practice (DESb 2017a).

5.2.2.2.5 The Child's Immediate Environment Provides the Context for Learning

Children learn with, in, and through the natural environment during nature pedagogical approaches, which underpin FS practice (Warden 2018; Cree and Robb 2021). Most CTs felt that the context of the natural forest environment was stimulating for learning. While the school garden provided some access to nature, it was limited in resources, such as trees to climb or space for running and games, a concern Madden (2019) and Moore (2019) highlight as a nationwide issue. However, the creation of stimulating school grounds requires careful planning by appropriate professionals (Moore 2019), which is not supported in the Department of Education and Skills Primary School Design Guidelines (2013). As a result, access to suitable forest environments required transport by bus each week. Heather, a senior infant CT, and Snowdrop, the fourth class teacher, outlined the challenge of funding the bus to provide access to the forest for children in this study. Moreover, permission to use this public land involved complex application procedures, as outlined in Chapter Four, Section 4.3.1.3. However, the researcher was surprised to learn that this had no impact on the number of schools, after-school clubs, and the general public that could also use the land, which conflicts with the "Leave no Trace" philosophy (Leave no Trace Ireland 2020) and forms part of a larger conversation regarding the maintenance of national parks in Ireland (Fogarty 2017). While an approach like FS can provide the children with sustainable thinking and knowledge of how to use and respect the land, it must be supported by city councils to ensure their natural parks are conserved. Dandelion, a senior infant CT, noted activities organised by the FSL also provided something *"new and different"* which the children requested to *"do again".* Thus, highlighting the importance of planning activities that utilise stimulating and rich natural resources to provide high-quality play experiences that invite and sustain active investigation (Harding 2008; Wilson 2008; Greenwood 2017; Cree and Robb 2021). It must also be noted that Snowdrop, the fourth class teacher, felt some children in her class found the forest environment overstimulating as *"there were new stimuli… or stimuli that they didn't meet with [previously], or have often"*. Therefore, James (2018) advises the teacher to consider the child's sensory preferences when planning FS activities.

5.2.2.2.6 Learning should Involve Guided Activity and Discovery Methods

Constructivist approaches to learning and teaching, namely discovery learning guided by teacher-directed facilitation (Schunk 2012; Bonfield and Horgan 2016), as noted in previous FS studies (O'Brien 2009; Leather 2012; Harris 2017; McCree 2019; Cree and Robb 2021), were observed by Foxglove, the fifth class teacher. While Heather, a senior infant CT, outlined her initial concerns regarding discovery learning methods, she reflected fondly on the outcomes of the FS approach as children engaged in problem-solving decisions. While positive learning outcomes were recorded by the researcher during tasks facilitated by adults, such as the blind-fold trail, building shelters, climbing trees, and making rope swings, Snowdrop, the fourth class teacher, outlined her concerns regarding children's engagement in repetitive behaviours at times. Thus, highlighting the need for teacher facilitation and guidance during discovery learning methods at FS.

5.2.2.2.7 Language is Central in the Learning Process

Integrated opportunities to learn language in different contexts and stimulating learning environments through playful interactions provide children with optimal language learning experiences (NCCA 2016). Heather, a senior infant CT, noted improvements in children's language skills and observed an increase in the amount of vocabulary used during child-led roleplay scenarios. New vocabulary such as *"tinder",* and names of plants *"gorse", "beech", "birch" and "moss"* provided children with opportunities to learn nature-based vocabulary in context, which address Madden's (2019) concerns regarding the need for children to engage with the natural world. The achievement of Literacy learning outcomes is discussed further in Section 5.2.2.4.2.

5.2.2.2.8 The Child Should Perceive the Aesthetic Dimension in Learning

The Irish PSC outlines that all dimensions of the child's life, to include the aesthetic, should be nurtured in order to provide enrichment in learning and lay the foundation for happiness and fulfilment (NCCA 1999a). Guiding principles of the FS approach also promote a holistic development of the learner, as included in Table 2.8 (FSA 2018b). The Irish primary school teacher facilitates this through creative responses and expression while encouraging higher-order thinking and problem-solving skill development (NCCA 1999a). Meanwhile, nature pedagogy encourages

development of aesthetic dimensions in learning through a familiarisation of our senses with nature (Bonnett 2007; Madden 2019). Dandelion, a senior infant CT, observed that *"every part of the child"*, to include emotional and physical elements, was catered for during FS. Problem-solving and higher order thinking skills were developed during tasks, namely swing making and shelter building, as noted by children during semi-structured interviews (Sparrow, fourth class; Heath, senior infants) and in pedagogical documentation (Olsson 2009). Activities, namely brewing herbal tea and partaking in a blindfold trail through the forest encouraged children to familiarise their senses with nature. Creative expression was encouraged through songs "Fire, Fire", "I am Awake, I am Alive", and "When Autumn Comes", and the provision of clay and drawing equipment each week.

5.2.2.2.9 Social and Emotional Dimensions are Important Factors in Learning

Social dimensions of learning were reported by CTs, who outlined collaboration during play-based learning provided children with opportunities to develop social skills. Foxglove, the fifth class teacher, noted the FSL's promotion of *"respect for one another"* and children Marjoram (fourth class) and Terra (senior infants) outlined that they learned to *"be kind to their friends"* at FS. The researcher recorded collaborative learning during group activities while hanging boundary flags, gathering sticks to light a fire, building shelters, the blindfold trail, sawing wood, creating swings in groups, taking turns on the hammock, and climbing the tree. This correlates with reported benefits regarding social learning outcomes from previous FS studies (Swarbrick et al. 2004; Ridgers et al. 2012; Waite et al. 2015; Harris 2017). However, tensions regarding suitable behaviour expectations during child-led approaches to learning and teaching within the context of school-created behaviour management policies, similar to previous FS studies, arose (Slade et al. 2013; Elliot 2015; Waite et al. 2015). Although perceived progressions in self-confidence were reported by CTs, O'Brien and Murray (2009) and Leather (2018) caution quick and unsubstantiated conclusions in this regard. However, Heather, a senior infant CT, Poppy, the second class teacher, and Snowdrop, the fourth class teacher, attributed children's successes in new experiences and challenges outdoors to increased self-confidence. In addition, Heather and Snowdrop outlined that time spent outdoors provided children with a means to take care of their mental health.

5.2.2.2.10 Learning is Most Effective when it is Integrated

Playful teaching extends previous socio-emotional and academic skills and knowledge through integrated learning experiences (Walsh et al. 2006; Ashiabi 2007; Han et al. 2010; Whitebread 2010; Weisberg et al. 2013; Pyle and Danniels 2017). Learning objectives of the Irish PSC allow for integration of learning and teaching outdoors through a variety of curricular subjects, as discussed in Chapter Two, Section 2.4.1, previously. Moreover, as FS is a broad concept, it can be integrated in many curricular subject areas, such as English, Maths, and Science (O'Brien 2009; Lamb 2011; Mackinder 2017; Coates and Pimlott-Wilson 2019). All CTs agreed that there was potential to teach all curricular subjects through the FS approach, however, Dandelion (senior infant CT) outlined that specific planning for this was necessary.

5.2.2.2.11 Skills that Facilitate the Transfer of Learning Should be Fostered

Heather, a senior infant CT, noted the *"abundance"* of opportunities provided by the forest for children in her class to develop fine motor skills, similar to previous FS studies (O'Brien 2009; Ridgers et al. 2012; Waite et al. 2015; Turtle et al. 2015). Poppy, the second class teacher, and Foxglove, the fifth class teacher, outlined their observations of development in social skills through collaborative learning opportunities, as discussed previously. Children outlined that they learned *"about nature"* (River, fourth class; Marjoram, fourth class; Birk, fourth class; Petal, fourth class; Lily, fifth class; Saffron, fifth class), and the researcher recorded teaching of specific Irish flora vocabulary, such as *"gorse", "beech", "birch", "moss"* (senior infants), *"beech nut"* (second class) during nature-based playful learning experiences. According to Heather, a senior infant CT, and Snowdrop, a fourth class teacher, children connected learning at FS to the need to relate and incorporate sustainable practices.

5.2.2.2.12 Higher Order Thinking and Problem-solving Skills Should be Developed

The Irish PSC outlines the importance of encouraging higher-order thinking and problem-solving skill development during learning (NCCA 1999a). Play-based approaches to learning allow children to participate in processes that involve many aspects of higher-order thinking and problem solving (Froebel 1826; Steiner 1916; Dewey 1933; Montessori 1949; Bennett 2006; Moyles 2008; Gray 2013b; Knight

2013; Robinson 2015; Sahlberg and Doyle 2019). The researcher observed children problem-solving during constructive play and *"lifting branches and sticks to balance on a tree to make shelter"* (second class, 09 Oct 2018), and Heather, a senior infant teacher, noted that *"they had to figure out how to make that stable and they were problem solving in a way"*. Here, the children were setting their own level of challenge through self-directed experiences (Brock et al. 2009; Whitebread 2010), which Poppy, the second class teacher, resulted in *"problem solving decisions themselves without having to be told so"*. Moreover, collaborative problem-solving activities were observed as children worked together to throw a rope over a high tree branch (senior infants, 02 Apr 2019) (French 2007, cited in NCCA 2009b).

5.2.2.2.13 Collaborative Learning Should Feature in the Learning Process

Poppy, the second class teacher, and Foxglove, the fifth class teacher, outlined their observations of collaboration learning during shelter building and the construction of rope swings, *"I did see a lot of the time, they were working together; 'You get this', and you know, 'Help me do that' and 'What will we do here?'"* (Poppy, second class teacher). Furthermore, the researcher recorded collaborative learning during group activities, namely hanging boundary flags, gathering sticks to light a fire or build shelter, and during structured games and activities led by FSL and CTs: the blindfold trail, sawing wood, creating swings in groups, taking turns on the hammock, and climbing the tree. Collaborative groupings were organised by the FSL, in consultation with CTs, however, Saffron (fifth class) outlined that she would like to choose the group she worked with.

5.2.2.2.14 The Range of Individual Difference Should be Taken into Account in the Learning Process

The Irish PSC outlines the importance of inclusion for the needs of all children through adapted teaching methodologies and strategies (NCCA 1999a; NCCA 2007; DESb 2017a). Heather, a senior infant CT, and Poppy, the second class teacher, outlined positive effects of active learning methodologies during child-led, open-ended play and exploration for children who found it difficult to "*sit and learn*" in the traditional classroom setting (Roe and Aspinall 2011; DCYA 2019). However, Snowdrop, the fourth class teacher, felt the forest provided a distraction to learning as some children expressed discomfort to stimuli in the forest, namely nettle stings

and insect bites, getting their hands dirty, getting wet in the stream, falling, and toileting outdoors, while others found structured elements, such as circle time, challenging as they wanted to be in the stream or climb trees.

Harsh weather conditions were recorded during the first FS session of the second term (05 Feb 2018). Snowdrop's fourth class were in the forest during this time, and she highlighted that this was a negative experience that the children "*always had to get over*" and "*won back*" as a result. Moreover, it was observed that these weather conditions impacted on the children's ability to engage in certain activities in FS, "*the children did not use the hammock or climbing tree today (only River) as they say it is too cold, their hands are cold, and the tree is too slippery*" (fourth class, 02 Apr 2019). While Palmer (2015) states that a dislike of adverse weather conditions is a modern-day issue, negative phrases regarding winter weather conditions are engrained in the native Irish language (Gaeilge). Phrases such as "ní lugha orm sioc ná é" translates to "I hate him more than I hate frost" and the many words for rain which include "clagarnach" (the sound of raindrops against a roof or window, heard from inside a house), "spútrach" (rain splashing in puddles or ground that has been temporarily turned to mud by rainfall) and "seadbhraon" (small raindrops that are carried horizontally by the wind) note the influence of weather on Irish life (Ó Séaghdha 2018a; 2018b; 2018c). Moreover, heritage and historical impacts are evident, such as the use of "staga" for a potato that has been damaged by frost (Ó Séaghdha 2018a; 2018b; 2018c). In contrast, "lómhar" translates to woolly and precious, while words associated with fire such as "deatach" (smoke) were also used to refer to a family grouping who may gather around this hearth (Ó Séaghdha 2018a; 2018b; 2018c). Inclement weather conditions can provide learning opportunities (Wilson 2008; NCCA 2009a), however, challenges in preparing for these conditions must be considered (Elliot 2015). Suitable clothing is one such preparation to support learning and teaching outdoors (Fjørtoft 2001; Bilton 2003; Knight 2011; Turtle et al. 2015; Leather 2018). This depends on parental/guardian, CT, and school knowledge along with available supports (Slade et al. 2013; Elliot 2015; Waite et al. 2015).

While departmental guidance states that all aspects of the inclusion of the child, such as behavioural needs, ought to be supported in planning, regardless of diagnosis (DESb 2017a), inclusive practices differed depending on the CTs' beliefs, school policies, and staffing. The FSL provided for physiological needs of warmth, food and safety through the use of supports, namely: shelter made from tarpaulin, the warmth of fire, hammocks to rest, a camping toilet and a hand-washing station that were provided each week (Sackville-Ford 2019a). However, the importance of consistency in staff members attending the FS sessions impacted on belonging and love needs being met (Sackville-Ford 2019a), as the negative effect of a change of special needs assistant (SNA) was observed in the fifth class setting for a child with special educational needs, Watson. Moreover, the FSL voiced concerns over another child, Daisy's participation in FS, however, inclusive strategies were controlled by school policy and CT practice.

5.2.2.2.15 Assessment is an Integral Part of Teaching and Learning

According to the Irish PSC, assessment may be planned, or unplanned, and can occur during, or after learning to inform curriculum planning and determine individual children's leaning needs (NCCA 1999a; 2007; 2020). However, unplanned, "intuitive" assessment must consider curriculum learning outcomes and competencies (NCCA 2020). Assessment methods advocated in the Irish PSC range through a continuum of child-led assessment strategies to teacher-designed assessment approaches, as explored in Chapter Two, Section 2.3.2 (NCCA 2007; 2020). While these assessment methods are also applied during play-based learning (Dunphy 2008, cited in NCCA 2009b), the teacher must not interpret observations of play solely within curriculum learning outcomes, and ought to consider the child's disposition in addition to the development of knowledge and skills (Wood 2013; Bubikova-Moan et al. 2019). Therefore, assessment should occur through observation and interpretation of pedagogical documentation, or work completed by the child, to co-construct knowledge (Dahlberg 2012; Rinaldi 2012). Indeed, the guiding principles of FS advocate assessment based on observations and collaborative work between learners and practitioners which should clearly demonstrate the progression of learning (FSA 2018b). Assessment occurred through self-reflection opportunities, similar to previous FS studies (Murray and O'Brien

2005; Waite 2011; Maynard et al. 2013). Structured reflection of learning was observed in the closing circle during each FS session and child self-assessment occurred during tasks, namely making swings, climbing trees, building shelters, whittling, and fire lighting. While Heather, a senior infant CT, and Snowdrop, the fourth class teacher, outlined their reluctance to incorporate teacher-led assessment methods during FS, child-led assessment strategies (NCCA 2007) as advocated in Aistear: The Early Childhood Curriculum Framework (NCCA 2009a), proved helpful in providing Heather with strategies to assess outdoor play during FS (Bilton 2003; Greenwood 2017).

Overall, this section provides evidence that the principles of the Irish PSC were achieved during the FS sessions in this study. However, a need for further professional collaboration during planning and assessment to ensure learning is integrated with curricular achievements and skills progressions is evident. The following section will continue this discussion to consider the attainment of the Irish PSC curricular objectives and skill development in this case study.

5.2.2.4 The Attainment of Curricular Objectives and Skill Development During Forest School

This section outlines the achievement of curricular objectives and skill development in each subject area of the Irish PSC, as observed in the context of this study.

5.2.2.4.1 Physical Education

Broad objectives of the Irish PSC PE curriculum are categorised under headings of social and personal development; physical and motor development; knowledge and understanding; creative and aesthetic development; development of health-related fitness; and development of safety (NCCA 1999j). These objectives state that through experiencing movement, adventure, and challenge, the child should be enabled to develop self-esteem, self-awareness, confidence, initiative, and leadership skills. This should occur while interacting and co-operating with others during fair competition (NCCA 1999j). Achievements in strength, speed, endurance, flexibility, agility, alertness, control, balance, co-ordination, athletic skills (running, jumping, and throwing), dance, gymnastic movements, and game skills (sending,

receiving, and travelling) are outlined. The child should be able to apply these skills in order to live and move with confidence in the environment, and in, near, on, or under water (NCCA 1999j). Development of movement activities which consider space and speed in which the child can problem-solve are outlined. The child should be enabled to express him/herself through creative dance and the creation of simple games (NCCA 1999j). In addition to these broad objectives, the child should engage in cultural activities and gain respect for the environment in which PE occurs. The CTs noted developments in children's social and personal learning outcomes, specifically an increase in self-esteem, confidence and leadership skills during FS. Achievements in athletic, gymnastic, and game skills occurred in each class level, moreover, children developed navigation skills in the forest environment. In addition to this, children were also observed engaging in cultural activities of cooking foraged foods over a campfire, and a constant appreciation of the natural environment was encouraged. However, the school's insurance policy did not include cover for activities such as the use of knives and the lighting of fires. Fortunately, the FSL held a personal FS-specific insurance policy; however, this was self-funded.

5.2.2.4.2 Literacy

While broad objectives do not feature in this updated language curriculum, learning outcomes are outlined under elements of developing children's communicative relationships through language; the teaching of the content and structure of language; and exploring and using language (NCCA 2016). Achievements were observed in the oral language strand. These included the development of social conventions and awareness of others during playful learning activities, the acquisition of new vocabulary, the use of questions, categorisation, and reflection among junior class levels. While an effort to extend learning in literacy for senior class levels was observed, many experiences were similar across class levels. This finding was reflected in the fifth class teacher's interview also, as Foxglove noted the potential to incorporate Gaeilge (Irish) and writing activities during FS sessions. Thus, reflecting potential for further academic achievement in all literacy strands at senior primary level, reading and writing in junior and middle primary classes, and the incorporation of Gaeilge (Irish) toradh foghlama (learning outcomes) across all class levels.

5.2.2.4.3 Social, Environmental and Scientific Education

The Science curriculum notes the importance of the development of the child's interest in the world around him/her through the study of living and non-living things to understand the environments in which he/she lives (NCCA 1999e). Moreover, this curriculum outlines that a scientific approach involving questions, experiments, design, and analysis/evaluation should be accommodated. The child should be supported to explore environmental repercussions of human actions on physical, natural, and human environments, while understanding the interdependence of living things and recognising the importance of conservation and sustainability (NCCA 1999e). Learning objectives from the strand Living Things were achieved during these FS sessions as children in all class levels explored the natural environment of the forest. A scientific exploration of Energy and Forces was also observed in all class levels as children explored heat, and the impact of heat on plants and animals. The attainment of the content objectives under the strand of Materials and Environmental Awareness and Care were observed with junior classes.

Broad curriculum objectives in Geography outline the importance of knowledge and understanding of local, regional, national and international environments to understand natural, social, and economic processes which create, sustain, or change environments (NCCA 1999d). This curriculum notes the importance of developing map reading skills and a sense of space to understand how natural and human features are located and distributed in local or other environments. In addition to this, environmental awareness and conservation are promoted to develop aesthetic sensitivity to natural and human elements of the environment (NCCA 1999d). Children in all class levels were provided with opportunities to develop a sense of space in the natural environment of the forest. Impacts of human activity, such as lighting fires, littering, and cutting branches were explored with all class levels.

The History curriculum outlines the importance of a balanced understanding of family, local, national, and world history (NCCA 1999c). The child should be enabled to respect and value a range of opinions to acquire open, questioning attitudes to the beliefs, values, and motivation of others. A sense of personal, local,

national, European, and wider identities is developed through studying history and cultural inheritance to preserve heritage (NCCA 1999c). While all class levels discussed the appearance of the forest through time, further connections with the senior History curriculum were facilitated by the SET William, and Snowdrop, the fourth class teacher.

Overall, curricular learning outcomes in areas of living things, environmental awareness and care, the development of a sense of space, conservation, and impacts of human activity on the natural environment were evident in these FS sessions. While the development of skills, such as conducting scientific experiments and map reading were not achieved, Snowdrop, the fourth class teacher, and William, the SET, facilitated curriculum linkage and integration opportunities. Thus, there is potential to create further curricular integration through professional collaboration and planning for learning and teaching at FS.

5.2.2.4.4 Social, Personal and Health Education

Broad content objectives in Social, Personal and Health Education (SPHE) aim to develop a self-confident child with a positive sense of self-esteem through enhanced social skills of communication, co-operation, and conflict resolution (NCCA 1999i). This curriculum outlines the need to develop an understanding of healthy living, the importance of developing a sense of safety, and an awareness of individual and community rights and responsibilities that come from living in a democracy (NCCA 1999i). The SPHE curriculum endeavours to instil respect for the environment and develop each child's sense of responsibility for its long-term care, along with the development of appreciation and respect for diversity in society (NCCA 1999i). The development of a sense of personal safety was observed most often, as children were facilitated to self-assess their own safety around the campfire and while using tools. Aspects of healthy living, specifically, healthy eating, were explored with the classes through storytelling and active learning methods. Cooperative play and the development of a sense of responsibility for the environment of the forest occurred incidentally, as discussed previously.

5.2.2.4.5 The Arts

Children should be enabled to look at, enjoy and make a personal response to familiar and unfamiliar objects and images in the environment, while exploring and developing sensitivity to qualities of line, shape, colour and tone, texture, pattern and rhythm, spatial organisation, and form in Visual Arts (NCCA 1999f). Opportunities to express ideas, feelings and experiences in visual form using a range of materials to develop skills and techniques while looking and responding to art form broad objectives of this curriculum (NCCA 1999f). Emergent art-making occurred during FS as children from all class levels were provided with opportunities to engage in child-led explorations of clay, construction, print and fabric and fibre.

Broad objectives outlined in Music note the importance of opportunities for children to explore sources of sounds, listen to, enjoy, and respond to a wide variety of music while responding with sensitivity through physical, verbal, emotional or cognitive responses (NCCA 1999g). The child should develop an understanding of concepts of pulse, tempo, duration, pitch, dynamics, structure, timbre, texture, and style (NCCA 1999g). Opportunities to perform vocally and instrumentally in a range of music styles, while expressing ideas through composition and graphic and standard notations which may be recorded using electronic media are noted in this curriculum (NCCA 1999g). The children achieved music objectives in performing during song singing in this FS study.

5.2.2.4.6 Early Mathematical Activities

The mathematics curriculum outlines skill development for infant classes, these include applying and problem-solving, communicating and expressing, integrating and connecting, reasoning, implementing, and understanding and recalling (NCCA 1999b). Children ought to be provided with opportunities to select appropriate materials, apply strategies for completing a task, discuss problem, recognise mathematics in the environment, classify objectives, recognise patterns, and justify processes undertaken and results achieved (NCCA 1999b). Opportunities develop skills of classify, compare and order were observed with the senior infant class.

To summarise this section, while similarities in theoretical processes underlying the Irish PSC and the FS approach to learning and teaching were compared in Chapter Two, Section 2.9, curricular objectives were more commonly observed in PE and SPHE. While this may address departmental suggestions regarding the need to increase additional time allocated for PE, SPHE, and wellness (NCCA 2020), a higher incidence of curricular objectives were achieved in the senior infant class, reflecting FS' initial design as an Early Childhood Education (ECE) approach, previously outlined in Chapter Two, Section 2.5. Skill-set development, such as the fundamental movement skills (FMS) in PE, were not recorded, which Irvin (2019) outlines may be addressed through parental involvement and staff engagement in FS leadership CPD. She acknowledges the challenge of school budgets and funding and, thus, advises achieving this through long-term staff CPD goals. This echoes a requirement for strong collaboration between CTs and the FSL to ensure a high standard of learning and teaching occurs through careful planning, as advised by Westwood (2015), and outlined in departmental guidance (DESb 2017a). These findings also question the influence of the design of the Irish PSC in which holistic learning experiences are central to the vision and aims, which conflict with highly structured subject content objectives (NCCA 1999a; NCCA 2010). However, the forthcoming revised primary curriculum framework, currently in draft format, suggests five broad curriculum areas of Language, Maths, Science and Technology Education, Well-being, Arts Education, and Social and Environmental Education, in which individual subjects do not feature from infants to second class, and learning and development is extended through play-based pedagogical experiences (NCCA 2020), which may address this.

5.2.2.5 A Play-based Approach to Learning and Teaching

The purpose of Aistear: The Early Childhood Curriculum Framework is to provide children from birth to six years with enjoyable and challenging learning experiences so that they can grow and develop as competent and confident learners (NCCA 2009a). This framework notes that children learn through holistic, active, playful, hands-on, relevant and meaningful experiences through communication and language in a stimulating learning environment (NCCA 2009a). Learning goals from Aistear: The Early Childhood Curriculum Framework (NCCA 2009a) themes of Well-being, Identity and Belonging, Communicating and Exploring and Thinking were

attained with the senior infant class. The children's lived experiences were incorporated during child-led, emergent play-based learning and teaching, which differed from the teacher-led theme of "The Travel Agent" in the mainstream classroom setting (Wood and Attfield 2005; Fallon 2017). While progression in play skills were observed, when unconventional play topics, explored previously, had the potential to incorporate SPHE curricular content objectives, there was no facilitating adult near the children to capture this learning opportunity. Thus, it is imperative that play outdoors is developmental and progression is facilitated so high-quality learning and teaching occur (Kernan and Devine 2010; Hansen Sandseter et al. 2012). This outlines the need to observe, assess, and teach children the necessary skills during play (Bilton 2003). However, regardless of these concerns, Dandelion (senior infant CT), Snowdrop (fourth class teacher) and Foxglove (fifth class teacher) believed that FS provided the children in this school with a positive experience of the outdoors overall and opportunities that they may not receive otherwise.

5.3 Conclusion

Participants responded positively to Forest School overall.

Forest School provided opportunities to learn about nature while considering sustainable approaches to living.

Child-led assessment and reflective methods were the main assessment approaches observed.

The vision, aims, and principles of the Irish Primary School Curriculum were achieved.

The achievement of curricular learning objectives were observed most often in Physical Education and Social, Personal and Health Education.

Class teachers noted positive effects of learning during Forest School for some children who found the classroom setting challenging. However, the forest setting was overstimulating for others.

A higher incidence of subject learning outcomes were recorded in the senior infant class.

Adult-facilitated planned activities provided children with opportunities to engage in problem-solving and higher order thinking skills.

Proactive and intentional planning, in balance with reflexive practice is required.

Figure 5.2 "Growth" (Murphy 2022)

In summary, while participants were unfamiliar with the FS approach prior to this study, CTs responded positively, and most children enjoyed learning through playful methodologies in the space of the forest. The CTs noted that learning during

FS provided children with opportunities to learn about nature while considering sustainable approaches to living, which may contribute towards the DESb's (2022) plan to develop and build pedagogical guidance across ECE, primary, and post-primary sectors. While FS guiding principles are grounded in a playful approach to teaching (FSA 2018b), a need for proactive and intentional planning, in balance with reflexive practice is required to incorporate a variety of play types in each outdoor session. According to the CTs, the broad child-centred vision and aims of the Irish PSC (NCCA 1999a) were achieved during these FS sessions. The needs of the children were nurtured as they connected with their local environment during co-operative tasks that actively encouraged and enabled them to realise their potential. Principles of the Irish PSC (NCCA 1999a) were also achieved as children were provided with opportunities to follow their curiosity and choose learning activities within the motivating environment of the forest. Adult-facilitated planned activities provided children with opportunities to engage in problem-solving and higher order thinking skills, while familiarising their senses with nature and expressing themselves creatively to engage in aesthetic dimensions of learning. The CTs noted positive effects of learning during FS for some children who find the classroom setting challenging, however, the forest setting was also overstimulating for some children. Therefore, the importance of parental/guardian communication and understanding of learning during FS was necessary in preparing and providing supports to enable children to learn outdoors. The achievement of curricular learning objectives were observed most often in PE and SPHE, and a higher incidence of subject learning outcomes were recorded in the senior infant class. Child-led assessment and reflective methods were the main assessment approaches observed, however, incidences in which members of the school staff created connections with school-based lessons integrated learning and provided children with skills that facilitated a transfer of learning. Thus, cyclical processes of planning, observation, and reflection can support the attainment of curricular subject learning outcomes.

The following, and final chapter outlines recommendations from this study to contribute to new knowledge and policy development and advise future research

opportunities regarding the FS approach to learning and teaching in the context of the Irish PSC.

Conclusion and Recommendations

6.1 Introduction

The aim of this study was to explore children and primary school teachers' perspectives regarding the introduction of the Forest School (FS) approach to teaching and learning in the context of the Irish Primary School Curriculum (PSC). Chapter One introduced the researcher's positionality alongside literature outlining the importance of the natural world to develop the child's perceptions of his/her local environment in order to create deep connections with nature, which provided a rationale for this study. The conversation was grounded in a combination of philosophical and research-based theories to create a conceptual framework in which the research questions were guided. Guiding principles of the FS approach to learning and teaching were introduced, and a need for a critical understanding of the FS approach to learning and teaching in the context of the Irish PSC was outlined. Chapter Two provided the reader with the historical context and underpinning educational theories of the Irish PSC and the FS approach. Tensions between formal, structured curricula and emergent, play-based approaches were discussed, which led to an outline of the importance of reflexive practice for integrated, interactive pedagogy. It was evident that the structured learning objectives of the Irish PSC can challenge the experiential, child-led emergent approaches to learning and teaching advocated in the FS approach. Thus, it was imperative that practising class teachers' (CT) perspectives were gathered in this study to capture their reality of learning and teaching through emergent, experiential, child-led approaches during FS. In addition to this, the dominance of social and emotional learning outcomes of the FS approach, as documented in previous studies, posed the question whether a variety of Irish PSC subject content objectives would be achieved during FS sessions? Therefore, it was also vital that the child's voice was placed at the centre of this study to determine if this approach remained true to the underpinning child-centred philosophy. Methodological approaches, grounded in Bronfenbrenner's Bio-ecological process-person-context-time (PPCT) Model (Bronfenbrenner 1979; Bronfenbrenner and Morris 2006) and Yin's (2018) case study research design were detailed in Chapter Three. Themes which emerged from rigorous data-analysis processes were outlined

in Chapter Four and discussed in Chapter Five. This chapter presents conclusions and provides recommendations which aim to contribute to the current body of research regarding the FS approach to learning and teaching in the Irish PSC, and highlight recommendations and implications for policy and practice, and future research opportunities.

Findings highlighted that while FS guiding principles are grounded in a playful approach to teaching (Forest School Association (FSA) 2018b), a need for proactive and intentional planning, in balance with reflexive practice is required to incorporate a variety of play types in each outdoor session. Therefore, CT understanding of learning during FS is necessary to prepare and providing supports to enable children to learn outdoors. Learning during FS provided children with opportunities to learn about nature while considering sustainable approaches to living. While child-led assessment and reflective methods were the main assessment approaches observed, incidences in which members of the school staff created connections with school-based lessons integrated learning and provided children with skills that facilitated a transfer of learning. Thus, cyclical processes of planning, observation, and reflection can support the attainment of curricular subject learning outcomes. Recommendations discussed in this chapter build on these findings. The importance of planning for teaching which begins in the child's lived experience of the outdoors, while incorporating teacher facilitation and guidance during discovery learning methods to ensure high quality learning experiences is discussed. Inclusive techniques which consider a universal design for learning during FS (Ahead 2020) and recommendations for behaviour management strategies are outlined. Opportunities to incorporate Irish culture and heritage, as outlined in the Social, Environmental and Scientific Education (SESE) (History, Geography, and Science) curriculum to develop education for sustainable development (ESD) during FS are detailed. Recommendations for the inclusion of outdoor pedagogical CPD, specifically FS, for Irish primary school teachers in noted. In addition to this, financial requirements for learning and teaching outdoors and the need for sustainable approaches to maintaining natural spaces are recommended.

The first recommendation outlines the importance of the inclusion of the voice of the child in planning for co-constructed teaching at FS to ensure learning is situated in the child's lived experience of the outdoors.

6.2 Navigating a Co-constructed Curriculum at Forest School in the Context of the Irish Primary School Curriculum

While most of the children had visited a forest, few were familiar with the FS approach to learning and teaching. Thus, in order for learning and teaching outdoors to begin at the child's lived experience, it is imperative that the child's voice is incorporated in a curriculum co-constructed with CT/forest school leader (FSL) and child. Moreover, when a child's voice is meaningfully included and their opinions are considered during decision making, meaningful connections are created between the child and the teacher/school (Giannakaki et al. 2018). This also results in the enhancement of the child's self-esteem to create a strong sense of autonomy, independence, social competence, and resilience (Ring and O'Sullivan 2016). Furthermore, when a child feels that his voice is heard through active participation, a sense of ability, empathy, and awareness of people's rights are nurtured (Giannakaki et al. 2018). The Rights of the Child state that children have the right to have their voice heard, which should result in their opinions taken into account and their views respected in decision-making that affects them (United Nations (UN) 2010; Ring and O'Sullivan 2016). While the Irish PSC endeavours to achieve this (Walsh 2012; Irwin 2018), recent curricular developments outline a need for broad, process-based approaches to learning and teaching which facilitate communication and the use of language (Hayes and Kernan 2008; National Council for Curriculum and Assessment (NCCA) 2020). Constructivist pedagogical approaches rely on the child's experiences to contribute to rich interactions (Piaget 1936; 1945; Piaget and Inhelder 1973; Vygotsky 1926; 1929; NCCA 1999a; Cohen et al. 2004; Murphy 2004; O'Brien 2009; Leather 2012; Schunk 2012; Harris 2017; Forest School Association (FSA) 2018b; McCree 2019) and emergent play-based learning and teaching during FS can provide children with a space to use their voice to create scenarios that reflect their lived experience (Rousseau 1762; Froebel 1826; Dewey 1902; 1916; 1933; 1934; 1938a; 1938b; Bilton 2003; Malaguzzi, cited in Cagliari et al. 2006; Kernan and Devine 2010; Hansen Sandseter et al. 2012; Gray 2013a; Wood 2013; Ashman 2014; Hunter

and Walsh 2014; Sahlberg and Doyle 2019; Egan 2020). Foxglove (fifth class teacher) outlined that incidental reflective dialogue occurred after the FS sessions, however, high quality interactions which reflect on learning and contribute to responsive pedagogy are required (NCCA 2020) so the child is enabled to become a co-constructor of knowledge in shared thinking with the CT/FSL (Edwards 2012; Forman and Fyfe 2012; Swann 2012; Ring and O'Sullivan 2018). This negotiated analysis of learning enables the CT/FSL to design learning experiences in response to the child's beliefs and assumptions (Forman and Fyfe 2012). Provision of strategies such as pedagogical documentation, as included in this study, are beneficial in providing alternative mediums for children to express their voices. Aistear: The Early Childhood Curriculum Framework (NCCA 2009a) provided guidance to Heather, a senior infant CT, who incorporated planned listening techniques (Edwards 2012; Rinaldi 2012) by creating an intellectual dialogue with the children when they returned to the classroom setting through the use of drawings. Documentation, along with observations and interpretations, supports the co-construction of knowledge between the child and CT/FSL (Olsson 2009; Dahlberg 2012; Edwards 2012; Foreman and Fyfe 2012; Rinaldi 2012) and enables child-led differentiation (Westman 2018; Westwood 2018).

The second recommendation outlines the need for teacher facilitation and guidance during discovery learning methods to ensure high quality learning experiences in addition to the development of the child's self-confidence and realisation of his/her full potential (Kernan and Devine 2010; Hansen Sandseter et al. 2012; NCCA 2020).

6.3 Accommodating Emergent, Child-led Learning during Forest School within the Context of the Irish Primary School Curriculum

While the current Irish PSC (NCCA 1999a) seems contradictory in its core messages of child-centredness and fixed content objectives (Irwin 2018), broad and flexible approaches, such as FS, can lend itself to many means of interpretation (O'Sullivan and Ring 2021). Therefore, the Irish Forest School Association (IFSA) promotes learning and teaching in FS that is closely related to "regular curricular requirements" (IFSA 2019). As this approach is not a "free-for-all" (Mitchell 2019, p.

158), extensive planning is required (Cree and Robb 2021), and didactic teaching, in balance with emergent, experiential, and inquiry-based learning experiences, should feature (Martlew et al. 2011; Pyle and Danniels 2017). This may occur through adult-led, directed, and initiated teaching to child-led and initiated playful learning, as illustrated in Figure 6.1, below (Cree and Robb 2021).
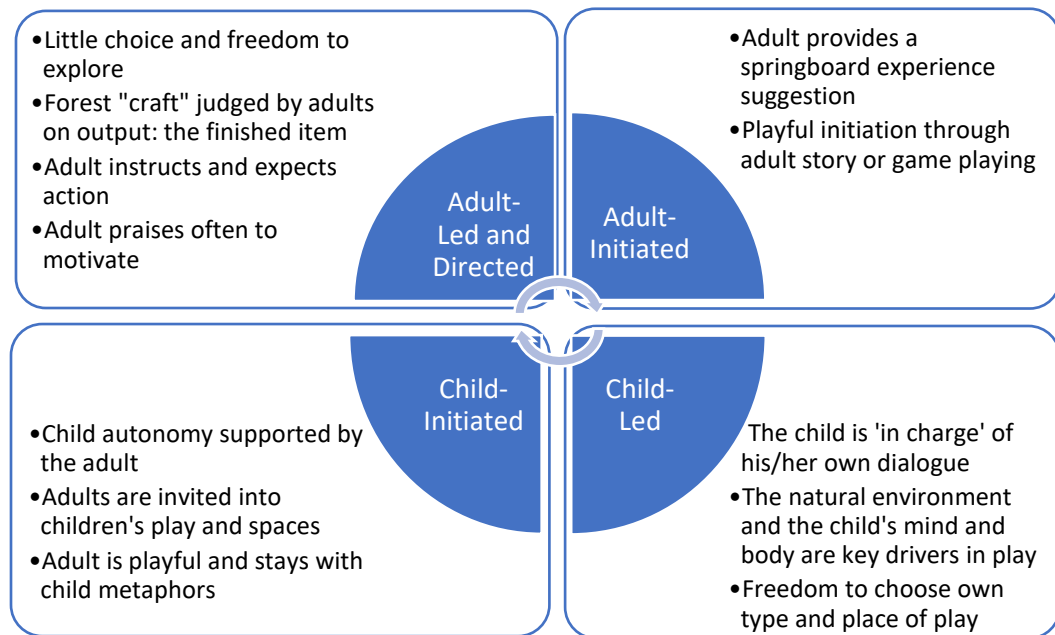
Figure 6.1 Nature Play Cycle (Cree and Robb 2021)

Moreover, a balanced value of academic, experiential, and practical teaching methods in which FS is integrated within the school curriculum, to value child-led playful learning in a collaborative environment with consistent support (McCree 2019; Sackville-Ford 2019a) can address tensions that arise in the maintenance of the principles of FS (freedom, independence, and child-led learning) and the need to influence the child's academic ability (Maynard 2007; Slade et al. 2013; Harris 2017). Thus, cycles of planning-observation/support-reflection/review provide the CT/FSL with opportunities to connect emergent learning experiences with curricular aims and subject content objectives (NCCA 2009a; Broadhead and Burt 2012; Fallon 2017; Sproule 2017; Ephgrave 2018). However, Madden's (2019) concerns regarding Irish CTs' level of nature knowledge, as detailed in Chapter Two, Section 2.4, may result in an oversight of potential nature-based learning opportunities. Therefore, Beigi

(2021) advises the need for the adoption of a pedagogical lens which considers specific outcomes of nature play, as included in Appendix O.1.

6.4 Assessment *Of* and *For* Learning during Forest School

As emergent, experiential, inquiry, child-led and play-based approaches to learning and teaching require co-construction of knowledge and new learning for both the CT/FSL and child, assessment *of* and *for* learning is paramount (NCCA 2007; Beard and Wilson 2018). Curricular guidance outlines that assessment *of* and *for* learning is a collaborative process between the child and the CT/parent(s)/guardian(s) to gather, record, interpret, use, and report information regarding progress and achievement in developing knowledge, concepts, competencies, skills, and dispositions (NCCA 2007; 2020). While this may begin on the continuum of intuitive assessment, it should be integrated into pedagogy and related to learning outcomes and competencies (Ahead 2020; 2021; NCCA 2020). Assessment in play-based learning environments should consider the use of space in the outdoors to understand if the environment is supporting or hindering play (NCCA 2009; Podmore and Luff 2012). In addition to this, Fallon's (2017) cyclical approach to evaluating play through planning, observation, and reflection, as explored in the literature review chapter, and the application of Ephgrave's (2018) responses to play, outlined in Figure 2.10, such as recalling, providing a narrative, and facilitating and setting challenges, can provide additional approaches to assessment *of* and *for* learning. All children should be provided with the opportunity to talk and reflect on progress through assessment methods that begin with the child's perspective and are adjusted to his/her educational context to create future learning opportunities, which can be addressed by accommodations in learning experiences (Dalke et al. 2007; Bradford 2018; Ahead 2020; 2021; NCCA 2020). A nature journaling approach may provide structure for this, and examples are included in Appendix O.3 (Muir Laws and Lygren 2020). Also, a three-pane analysis of learning during FS can integrate "lenses" of assessment to create future learning opportunities the child can achieve with CT/FSL assistance (Podmore and Luff 2012, p.99). The researcher applied this model to observations from this study to provide an example, as outlined in Table 6.1, below.

A Three-Pane Approach to Observations in Forest School

Observation (Interpersonal Lens)	Environment (Institutional Lens)	Interpretation and Analysis- to Support the Child's Learning
Terra, Sierra, Olive, Wisteria, Juniper and Vernon practice throwing the rope over a branch.	The ropes and instructions for creating a rope swing are left beside a tree with strong branches to hold the weight of a child in a swing.	It was beneficial to leave the materials beside a suitable tree to encourage the children to use them. It would be helpful to station a teacher here to support the children as this task was challenging.
The Forest School Leader labels the new flowers that have grown in the forest since their last visit: "holly blossoms" and "hawthorn flowers" and she encouraged the children to taste the young beech leaves.	There are no labels or visuals to support the children's learning further. The Forest School Leader provides information cards that have many plants identified on them.	Simple identification cards that only include the names of plants in the environment may be useful. The children can incorporate them into a matching or categorisation game.
Five girls (out of the group of twelve children- boys and girls) make clay creatures together- they use natural resources to create texture and line in the clay.	There is a ground tarpaulin with clay and chopping boards left out for children to use as they so wish.	In this area, a suggestion box may be included to allow children interested in crafts to request specific materials. A teacher could be stationed here to encourage the children to look and respond to their creations and reflect on the elements such as texture and line. The children could take photographs of this work to include in a learning

		portfolio to describe the process.

The following section outlines inclusive techniques which consider a universal design for learning during FS (Ahead 2020).

6.5 A Universal Design for Learning during Forest School

Although previous literature outlines benefits of the FS approach for children with specific learning needs (Louv 2009; Roe and Aspinall 2011; Waite et al. 2015; Williams 2017), policy and practice have moved towards a universal design for learning, which considers multiple means of engagement with new learning, multiple means of representation of new information, and multiple means of action and expression to demonstrate new learning (Ahead 2020). Recommendations by The European Agency on Special Needs and Inclusive Education (2017a) for achieving high-quality education for all learners advise the provision of a flexible curriculum to ensure content is relevant to all. This flexible curriculum includes the teaching of life, work, and personal skills, alongside the development of teachers' assessment literacy to support further learning. The European Agency on Special Needs and Inclusive Education (2017b) provides a self-reflection tool for practitioners to consider environmental factors which may influence access to quality education. Learner engagement and voice are central in this reflection tool. Processes of learning at school are supported during social interactions, authentic learning activities, approaches to increase learning capacity, personalisation, assessment for learning, and multiple means of expression (European Agency on Special Needs and Inclusive Education 2017b). Structures which support these processes consist of leadership, a continuum of support, collaboration, professional development for diversity, ethic of everybody, and family involvement (European Agency on Special Needs and Inclusive Education 2017b). Support for all learners should be formed along a continuum, and resources should be provided once barriers to learning become evident (European Agency on Special Needs and Inclusive Education 2017b). The National Educational Psychological Service (NEPS) Special Educational Needs Continuum of Support (Department of Education and Skills (DESb) 2007) provides Irish primary school

teachers with a graduated problem-solving model approach to assessment and intervention, formed upon Special Education Circular 02/05 (Department of Education and Science (DESa) 2005b). Levels of assistance are provided along a continuum of whole school and classroom support, to group and individual approaches (DESb 2007). This model of assessment and intervention is underpinned by the recognition that special educational needs occur along a continuum from mild to severe, and from transient to long term (DESb 2007). Importance is placed on assessment to inform planning and intervention which is consistently reviewed. The Better Start Access and Inclusion Model (AIM) provides a continuum of support for children with disabilities to access and participate in stated funded Early Childhood Care and Education (ECCE) programmes (AIM 2022a). The AIM Inclusive Play (AIP) pack and resources provide support for Aistear: The Early Childhood Curriculum Framework (NCCA 2009a), and offers guidance for play-based learning and teaching by considering how resources utilised can extend or scaffold children's interests and learning, how a specific resource may meet individual needs of groups of children in the setting, and through advising educators to observe children's use of resources to inform planning for follow-up use of the resource.

In addition to these points, we must remain vigilant of "hard" and "soft" barriers to inclusion at FS (Hopkins 2011, p. 131). Hard barriers are tangible items, such as access, equipment, and policies, while soft barriers include attitudes and beliefs that are rarely explicit (Hopkins 2011). Thus, common-sense safety procedures ought to be applied for children with physical mobility needs to encourage them to partake in the same activities as their peers (James 2018), and visual cues can support children with speech and language difficulties, and dyadic activities (occurring between two children) can be included to support learning for children with hearing loss (Diamond 2004; James 2018).

Recommendations for behaviour management strategies for learning and teaching at FS are discussed in the next section.

6.6 Behaviour Management Techniques during Forest School

Positive rapports between CT/FSL and child provide a foundation for the creation of learning habits, such as routines and behavioural expectations, which are

responsive to space and place and mindful of sensory stimulation (NCCA 2009a; Lave and Wenger 2016; Beard and Wilson 2018; Mitchell 2019). However, confusion regarding the role of CTs during behaviour management issues was also highlighted in this study. Behavioural management in FS begins with collegial collaboration, communication, and support in which both CT and FSL share an understanding of expectations to provide each other with professional moral support (DESb 2017a; Ahead 2021; Cree and Robb 2021; National Council for Special Education (NCSE) 2021a). Furthermore, consultation with children and their parent(s)/guardian(s) to create class or individual behavioural contracts can provide ownership over strategies to support the child's learning during FS (DESb 2017a; Cree and Robb 2021; NCSE 2021c). Strong collaborative techniques in behaviour management ensure strategies are consistently implemented (NCSE 2021c) and subsequent communication can repair and rebuild relationships after incidents that allow the child to create connections between his/her emotions and feelings at the time and the behaviour and action observed (NCSE 2021h). In addition to this, negotiated learning approaches in which the FSL/CT act as a co-playing facilitator during sustained shared thinking in child-led emergent approaches (Forman and Fyfe 2012) facilitate children to discuss conflict, instead of monitored pedagogical approaches and behavioural reminders (Siraj-Blatchford and Sylva 2004; Rodgers et al. 2017). Here, the CT/FSL models behaviour through thinking out loud, questioning, reflection on actions and feelings in order to understand behaviour observed (Wood and Attfield 2005; Forman and Fyfe 2012). Factors such as lack of negotiation, cooperation or conflict resolution skills affect children's ability to engage in play-based learning (Wood and Attfield 2005) and interventions to support behavioural concerns may be required (Ephgrave 2018). Structured behavioural strategies during transitions to outdoor learning spaces, namely meeting at "The Guardian Tree" and circle time activities were commended by the CTs in this study (NCSE 2021b). Environmental behavioural triggers may be mitigated through the provision of calm learning areas, which include hammocks and comfortable spaces sheltered from sunlight and/or warmed with a campfire (NCSE 2021d). Safety concerns within the outdoor learning environment should be considered through specifically designated areas for activities, such as tree climbing, shelter building, and fire lighting (NCSE

2021d) which provide children with elements of choice and self-management to learn independently at times and avoid the need for constant adult prompting or direction (NCSE 2021f; 2021i). Questions regarding behaviour management and the school's policy were raised. This corresponds with Sackville-Ford's (2019b) writings in which he observed that while behaviour policies form an element of the FS Leadership continuing professional development (CPD) qualification, in real-life practice, FSLs tend to utilise the school's behaviour policy. Instead, a specific FS behaviour policy ought to be created which can reflect FS guiding principles to learning and teaching (Sackville-Ford 2019b).

The following recommendation outlines the impact of incorporating Irish culture and heritage, as outlined in the SESE (History, Geography, and Science) curriculum to develop ESD at FS.

6.7 Incorporating Irish Culture and Heritage during Forest School to Achieve Education for Sustainable Development

While the effectiveness of incorporating Scandinavian approaches to learning and teaching was questioned in previous studies (Leather 2013; 2018; Lloyd et al. 2018), an incorporation of Irish cultural and heritage traditions alongside this Scandinavian approach may situate learning and teaching within the child's lived experience to create curricular connections with the natural environment during FS (Cree and Robb 2021). Moreover, education situated in the local environment is particularly powerful to understand climate change processes (O'Dwyer 2022), thus addressing recent departmental concerns regarding the need for pedagogical guidance in ESD (NCCA 2020; DESb 2022). The Irish PSC History curriculum places importance on the development of a sense of personal, local, and national identities through studying cultural inheritance to preserve heritage (NCCA 1999c; 1999l). History provides children with stories of indigenous people, who for centuries developed sustainable ways of living in local environments (Dolan and O'Sullivan 2022). This can equip children with knowledge and ideas to uncover different ways to interact with the natural environment (Dolan and O'Sullivan 2022). In Geography, children develop aesthetic sensitivity to the natural and human elements of the environment and to the repercussions of human actions learn of and come to value

the diversity of peoples, cultures, and societies in Ireland and throughout the world (NCCA 1999d; 1999m). Local geographical issues provide a strong starting point for children to appreciate the explicit and implicit impacts of climate change (Dolan 2022). The Science curriculum also recognises the importance of conservation and sustainability (NCCA 1999e).

Irish cultural and heritage influences were evident in this study as traditional Celtic festivals such as "Samhain" and "Imbloc" were celebrated during the FS sessions, as supported in FS literature (Davenport 2019). The Irish Celtic calendar may provide direction in creating an approach to learning and teaching during FS which honours cultural heritage. This Celtic calendar considers the festival of "Samhain", which occurs around the first of November, as a period of darkness which represents death, a time of self-reflection and hibernation. New growth is celebrated from the first of February, as festivals such as "Imbolc", "Bealtaine" (around 01 May) and "Lúnasa" (around 01 August) are marked with ceremonial fires to celebrate growth and harvest (Danaher 1972). Furthermore, traditions such as creating May bushes, dancing, and the placement of offerings around homes highlight that these festivals were deeply rooted in nature, growth, and the harvest of food in a traditional farming culture. Superstition and myths underpinning these festivals, many of which begin in nature and are engrained in the Irish psyche and contribute to our cultural and natural heritage, are in danger of being forgotten (Locke 2017; MacCoitir 2018). Furthermore, storytelling is an important teaching strategy which deepens emotional connections in inquiry-based learning (Mitchell 2019). Folklore stories from traditional Ireland are promoted through the History curriculum in the strand of Stories (NCCA 1999c). Here, it is expected that the child will be provided with opportunities to relate myths and legends to the beliefs, values, and tradition of their own culture. Moreover, myths and legends provide children with a sense of place as they learn how literature, culture, language, and customs reflect the nature of places in the PSC's Geography skills and concepts (NCCA 1999d) and storytelling connected to nature and the seasons provide children with significant experiences of the Earth as a living presence (Mellon 2000). Nature, specifically Irish trees, influenced many early Irish tribal, place names and ecclesiastical sites and may add another layer to

support the planning of FS sessions. Trees, seen as a source of power in superstitious beliefs to protect against ailments, are represented in the Ogham Tree Calendar in Appendix O.2 and can provide thematic inspiration for children to create their own learning opportunities within (NCCA 1999a; MacCoitir 2018). Integration and linkage within the Geography (NCCA 1999a; 1999d) strand of Natural Environments, provides the child with opportunities to understand interrelationships between natural features of the landscape and the lives of animals and humans. The incorporation of foraged native Irish foods such as nettles, primroses, dandelions, cleavers, elder flower, and hawthorn in recipes may provide children with an insight into recipes from an older Ireland. Ointments and perfumes that were traditionally created from these sources can deepen the child's knowledge of why these plants were important and can open questions for the child as to why they are not as commonly used today in society (The Herbal Hub 2020). This learning and teaching could be enhanced through planting traditional Irish vegetables such as onion, garlic, potatoes, carrots, turnips and parsnips, to name a few (Engage with Nature 2020). Links are formed here with Science curricular objectives as the children identify the interrelationship between plants and animals in their local habitat (NCCA 1999d). Identification of birds during FS sessions may be supported with resources from Birdwatch Ireland (2020) and Biodiversity Ireland (2020) to recognise birds both visually and through their bird song. This supports both Geography and Science curricular objectives (NCCA 1999d; 1999c).

The following section outlines recommendations for the inclusion of outdoor pedagogical CPD, specifically FS, for Irish primary school teachers.

6.8 The Provision of Outdoor Pedagogical Continuing Professional Development, such as Forest School, for Class Teachers in the Irish Primary School Context

The CTs' held ambiguous understandings of their role during FS, thus, recommendations for facilitating emergent, experiential, play-based approaches to learning and teaching outdoors is outlined (Bilton 2003; Wood 2003; Salberg and Doyle 2019). While the role of the Irish primary CT is one who creates a safe learning space, assists facilitation, provides encouragement, facilitates reflection, synthesising, remembering, prompting, and reformation to provide constructive

feedback in a relationship of trust (NCCA 1999a; Swann 2012; Robinson 2015), the CTs in this study remained on the periphery during FS. However, CTs' level of outdoor pedagogical knowledge may have been a contributing factor in this (Madden 2019). Therefore, inclusion of this approach to learning and teaching during initial teacher education (ITE) electives may provide CTs with foundational knowledge in outdoor pedagogy. However, Céim, The Teaching Council's standards for all teaching programmes, highlights compulsory requirements of modules Foundation and Professional Studies, School Placement, and Tréimhse Foghlama sa Ghaeltacht (immersive educational programmes through the medium of Gaeilge (Irish)) (The Teaching Council 2020) in recognised ITE courses. Moreover, discretionary time (consisting of 10% of time allocated for consecutive programmes of two years, and 20% of concurrent programmes of four years) must include core elements of inclusive education, global citizenship education, professional identity and agency, creativity and reflective practice, literacy and numeracy, and digital skills, along with the development of the confidence and competence of student teachers in Gaeilge (Irish) (The Teaching Council 2020). While elements of approaches to learning and teaching outdoors may be integrated in ITE modules, allocating time to accommodate the FS qualification may prove challenging. The Teaching Council outlines the importance of life-long teacher education along a continuum which encompasses ITE, Droichead (the integrated professional induction framework), and Cosán (teachers' CPD) (The Teaching Council 2020). Cosán, the framework for teachers' CPD, is supported by the Code of Professional Conduct for Teachers (The Teaching Council 2016), which states that teachers should take personal responsibility for sustaining and improving the quality of their professional practice by actively maintaining their professional knowledge and understanding to ensure that it is current, reflecting on and critically evaluating their professional practice, and availing of opportunities for career-long professional development. Moreover, The Teaching Council policy states that CPD is a right, and a responsibility for all teachers (The Teaching Council 2016). However, the Council also acknowledges that access to CPD is complex and can have cost, time, linguistic, and geographical dimensions (The Teaching Council 2016; Irvin 2019). Cosán notes the importance of incorporating teachers' perspectives to ensure learning opportunities are relevant to

the teacher's and the child's needs. Cosán values school-based, and external CPD equally, which can occur through courses, programmes, workshops, and other events (The Teaching Council 2016). Learning areas for CPD include leading learning, inclusion, well-being, ICT, literacy and numeracy, supporting teachers' learning (mentoring) (The Teaching Council 2016). The area of leading learning includes teachers' learning related to subject knowledge and pedagogical content knowledge (The Teaching Council 2016), which may accommodate the FS approach to learning and teaching. However, CPD must be continuous, sustained, and closely connected to the work of the teacher in the classroom (The Teaching Council 2016).

The following recommendation outlines financial requirements for learning and teaching outdoors.

6.9 Financial requirements for Learning and Teaching Outdoors

Firstly, learning and teaching outdoors required additional funding. Equipment, such as tarpaulin for shelter, toileting supplies, firewood and tools which include flint and steel, ropes and blades were necessary to provide suitable learning and teaching experiences outdoors. Funding was required for spare clothing and transportation to the forest. Although the FSL's fees were subsidised by the Heritage Council through the Heritage in Schools Scheme (2020), currently there is no departmental policy regarding funding for learning and teaching outdoors (Madden 2019; Moore 2019). An incorporation of inspirational outdoor learning spaces on school grounds, which may include a mini forest or a variety of native trees, areas such as raised beds or a polytunnel for growing edible plants, and a variety of terrain for children to move across, balance, and climb on, could provide a means of accessing this form of learning and teaching without the transportation, toileting, or shelter costs.

A sustainable approach to maintaining natural spaces for learning and teaching is recommended in the next section.

6.10 Sustainable Management of Outdoor Learning Spaces

In addition to this, a need for sustainable management of Irish public parks and forests became apparent during this study. The FSL held responsibility for insurance, the provision of shelter, and the safe lighting of fires. Fortunately, the FSL

practiced "Leave no Trace" principles (Leave no Trace Ireland 2020) and lit fires that left minimal impact on the land. However, a number of preschools, primary schools, post-primary schools, and clubs seemed to use the same area without many restrictions. There is scope to develop this area to ensure that the outdoors can be enjoyed by all children. The National Play Policy (Department of Children and Youth Affairs (DCYA) 2004) outlines the importance of the ongoing involvement of the voice of the child in planning and developing play spaces outdoors. Their model of good practice in Cabinteely Park, Dublin, demonstrates the importance of nature as a key element in the design concept which was achieved through the use of a willow dome, a maze of fruiting and edible plants, a nature play area with opportunities for same, and water play provides initial direction for this. Play Scotland (2019) also provide guidance in assessing the outdoor space as a place for playful learning and teaching. They supply a toolkit for the teacher to assess if space provides the child with a place to learn through physical, creative, and social play.

6.11 New Knowledge and Contribution to Policy and Practice

The researcher was concerned to explore whether the learning and teaching methodologies associated with the guiding principles of the FS approach could usefully contribute to the realisation of the vision, aims, principles, broad objectives, subject content objectives, concepts and skill development, and assessment of the Irish PSC. This study provides a contribution to the evidence base for FS as an approach to learning and teaching. The application of Bronfenbrenner's (1979; Bronfenbrenner and Morris 2006) Bio-ecological and PPCT Model as a theoretical foundation for the study addresses the need to situate FS in well-designed and well-conducted research (Leather 2013; 2018). Moreover, this case study represents the exploration of FS at primary school level in Ireland, to establish how this approach may enhance learning and teaching and the delivery of learning outcomes at this standard.

Meaningful inclusion of children's voices in planning for learning and teaching at FS helps achieve a co-constructed curriculum which provides the child with autonomy, independence, social competence, and resilience (Ring and O'Sullivan 2016), along with a sense of ability, empathy, and awareness of people's rights

(Giannakaki et al. 2018). While one CT outlined how incidental reflective dialogue occurred during these FS sessions, high quality interactions which reflect on learning and contribute to responsive pedagogy are required (NCCA 2020). This may be achieved through the use of documentation, along with observations and interpretations (Olsson 2009; Dahlberg 2012; Edwards 2012; Foreman and Fyfe 2012; Rinaldi 2012).

The guiding principles of the FS approach state that planning, adaption, observations, and reviewing are integral elements, and where appropriate, the FSL should link experiences at FS to home, work and/or school education (FSA 2018b). This study highlights the importance of finding balance between adult-initiated teaching and emergent child-led learning during FS. Planning, which is required for intentional playful pedagogy (Walsh 2017), along with the facilitation of emergent learning, can provide children with a space to create scenarios that reflect their lived experience (Fallon 2017). Therefore, cycles of planning-observation/support-reflection/review provide the CT/FSL with opportunities to connect emergent learning experiences with curricular aims and subject content objectives (NCCA 2009a; Broadhead and Burt 2012; Fallon 2017; Sproule 2017; Ephgrave 2018). In addition to this, specific nature play learning outcomes may provide a pedagogical lens for learning during FS (Beigi 2021). However, CT knowledge of the FS approach and nature-based education was limited (Madden 2019). Moreover, access to FS CPD is currently determined by CTs' personal resources, however, this study outlined that there is potential to incorporate this approach under the Cosán CPD framework (The Teaching Council 2016).

Behaviour management strategies are founded in positive relationships between the child and the FSL/CT during FS. Strong collaboration, communication, and support skills in which both CT and FSL share an understanding of expectations to provide each other with professional moral support can further enhance these positive relationships (DESb 2017a; Ahead 2021; Cree and Robb 2021; NCSE 2021a). Consultations with parent(s)/guardian(s) ensure strategies are consistently implemented (NCSE 2021c) and negotiated learning approaches in which the FSL/CT act as a co-playing facilitator during sustained shared thinking in child-led emergent

approaches (Forman and Fyfe 2012) facilitate children to discuss his/her emotions (NCSE 2021h). However, environmental behavioural triggers and safety concerns should be addressed in a specific FS policy to provide children with opportunities for self-management and avoid the need for constant adult prompting or direction (NCSE 2021f; 2021i).

Assessment methods *of* and *for* learning at FS are required to gather, record, interpret, use, and report information regarding progress and achievement in developing knowledge, concepts, competencies, skills, and dispositions (NCCA 2007; 2020). While assessment may occur on a continuum of intuitive to planned, it should include the child and CT/parent(s)/guardian(s) input and ensure the process is integrated into pedagogy and related to learning outcomes and competencies (Ahead 2020; 2021; NCCA 2020). Moreover, this can inform inclusive practice at FS through a universal design for learning, which considers multiple means of engagement with new learning, multiple means of representation of new information, and multiple means of action and expression to demonstrate new learning (Ahead 2020).

The inclusion of Irish culture and heritage during FS can situate learning and teaching within the child's lived experience to create curricular connections with the natural environment during FS to understand climate change processes and facilitate ESD (Cree and Robb 2021; DESb 2022; O'Dwyer 2022). This can be achieved through incorporating SESE curricular learning objectives (NCCA 1999c; NCCA 1999d; NCCA 1999e; NCCA 1999l; NCCA 1999m). However, financial supports are required to provide suitable learning and teaching experiences outdoors. A sustainable management of outdoor learning spaces which involve the voice of the child in planning and developing play areas can ensure natural amenities can be enjoyed by all children.

Thus, considerations which emerged from this study for key organisations include:

The Irish Forest School Association

- This approach to learning and teaching requires meaningful inclusion of children's voices during planning processes to achieve a co-constructed curriculum. Methods to incorporate this should be considered during FS CPD.

- The incorporation of adult-facilitation and initiated teaching alongside emergent child-led learning ought to be recognised in guiding principles of FS.

- Behaviour management strategies during FS ought to be founded in positive relationships between the child and the FSL. This can occur during negotiated approaches to learning in which the FSL acts as a co-playing facilitator during sustained shared thinking in child-led emergent approaches facilitate children to discuss his/her emotions.

- Assessment methods *of* and *for* learning at FS are required to gather, record, interpret, use, and report information regarding progress and achievement in developing knowledge, concepts, competencies, skills, and dispositions.

- The incorporation of parental/guardian perspectives should be acknowledged to ensure inclusive methodologies for additional and diverse learning needs are incorporated during FS.

Principals and Teachers

- Specific nature play learning outcomes may provide pedagogical directions for learning during FS.

- Environmental behavioural triggers and safety concerns should be addressed in a specific FS policy to provide children with opportunities for self-management and avoid the need for constant adult prompting or direction.

- Assessment can inform inclusive practice at FS through a universal design for learning, which considers multiple means of engagement with new learning, multiple means of representation of new information, and multiple means of action and expression to demonstrate new learning.

- The inclusion of Irish culture and heritage and the integration of SESE curricular learning objectives during FS can situate learning and teaching within the child's lived experience to create curricular connections with the natural environment during FS to understand climate change processes and facilitate ESD.

The National Council for Curriculum and Assessment/ Department of Education and Skills

- There is potential to incorporate the FS approach to learning and teaching outdoors in the Irish PSC through the Cosán CPD framework.

- Irish primary schools require financial supports to provide suitable learning and teaching experiences outdoors.

- Cycles of planning-observation/support-reflection/review provide the teacher with opportunities to connect emergent learning experiences with curricular aims and subject content objectives.

- Assessment of learning and teaching outdoors may occur through high quality interactions which reflect on learning and contribute to responsive pedagogy along with observations and interpretations.

6.12 Future Research Opportunities

Future research considerations that have emerged from the methodological approach and findings of this case study begin with the inclusion of the voice of the child as a co-constructor of knowledge in FS studies. These voices may be captured through the use of strategies such as pedagogical documentation, and other alternative means of capturing the child's voice using writing equipment, supported by views of parent(s)/guardian(s) and/or teachers, as achieved in this study. In addition to this, the inclusion of the parent(s)/guardian(s)' perspectives and understandings of this approach to learning and teaching would provide insight to the impact of FS in the home, and challenges which may have been experienced, such as the funding of suitable clothing. While this study focused on an introduction of the FS approach to learning and teaching in an Irish primary school, long-term impacts of this emergent, experiential, child-led approach may be advantageous to measure curricular attainment. Studies that provide insight into the long-term effects of FS over the course of multiple academic years may provide this insight. Further research regarding the measurement of child-led assessment methods and inclusive teaching during FS is required. It may be beneficial to situate studies of this nature within the context of the revised Irish primary curriculum framework, as it becomes available.

6.13 Conclusion

The findings from this research note that methodological approaches which capture the voice of the child, such as the incorporation of pedagogical documentation in this study, ought to be included to ensure the child's opinions are considered and s/he becomes a co-constructor of knowledge in the curricular design. While the CTs outlined that the FS approach to learning and teaching attained the vision, aims, and principles of the Irish PSC, the achievement of the many curricular content objectives provided a challenge. The forthcoming primary curriculum framework aims to address this overloaded curriculum through a provision of broad learning outcomes which will require teacher agency and planning for learning beginning at the child's lived experience. Benefits of adult-facilitated activities of shelter building, fire lighting, rope and tool use were observed alongside advantages of emergent child-led activities in this study. Appropriate assessment methods *of* and *for* learning (NCCA 2007) during play-based learning experiences at FS are required to integrate experiences that involve all aspects of a child's development. Strong professional collaboration between schools and external FS providers is also necessary to provide support for the inclusion of all children. Irish heritage may enable a culturally specific approach to FS, which can strengthen placed-based learning opportunities and ESD. However, teacher CPD and further support and guidance at policy levels are required to enable sustainable approaches to learning and teaching outdoors, and to overcome challenges, such as access to inspirational learning environments, suitable clothing, and insurance barriers.

Reference List

A

Access and Inclusion Model (2022a) *Aim Supports,* Available:

https://aim.gov.ie/aim-supports/ [Accessed 05 Jan 2022].

Access and Inclusion Model (2022b) *Inclusive Play (AIP) Pack and Resources,*
Available: https://aim.gov.ie/app/uploads/2018/04/Aim-Inclusive-Play-Information-
Guide.pdf [Accessed 05 Jan 2022].

Ahead (2020) *The Universal Design Framework Explained*, Available:

https://www.ahead.ie/udl-framework [Accessed 12 Dec 2020].

Ahead (2021) *Universal Design for Learning, A Best Practice Guideline,* Available:
https://www.ahead.ie/userfiles/files/shop/free/UDLL%20Online.pdf [Accessed 22
Feb 2021].

Aktepe, V. (2015) 'Implementation of a Performance Task for Developing the Value
of Love of Nature', *Educational Sciences: Theory & Practice*, 15(3), 771–786,
Available**:** https://doi.org/10.12738/estp.2015.3.2395.

All European Academics (2017) *The European Code of Conduct for Research
Integrity,* Available: https://www.allea.org/wp-
content/uploads/2015/07/Code_Conduct_ResearchIntegrity.pdf [Accessed 1 Jun
2019].

Alvesson, M. (2011) *Interpreting Interviews.* London: Sage.

Anderson, J. (2004) 'Talking Whilst Walking: A Geographical Archaeology of
Knowledge', *AREA*, 36 (3), 254-261, Available: https://doi.org/10.1111/j.0004-
0894.2004.00222.x.

An Taisce (2022) *Green Schools, Working Together for a Sustainable Future,*
Available: https://greenschoolsireland.org/[Accessed 07 Jun 2022].

Ashiabi, G. S. (2007) 'Play in the Preschool Classroom: Its Socioemotional
Significance and the Teacher's Role in Play', *Early Childhood Education Journal*, 35,
199-207, Available: https://doi.org/10.1007/s10643-007-0165-8.

B

Baker, F. (2017) 'Bringing Outdoor Play Indoors in United Arab Emirates: Mud as a Powerful Binding Element', *Childhood Education*, 93 (1), 73-79, Available: https://doi.org/10.1080/00094056.2017.1275245.

Ball, S. (2017) *The Education Debate*, 3rd ed. Bristol: Policy Press.

Ballantine, J.H. and Hammack, F.M. (2009) *The Sociology of Education, a Systematic Analysis.*, 6th ed. New Jersey: Pearson.

Ballantyne, R., and Packer, J. (2009) 'Introducing a Fifth Pedagogy: Experience-Based Strategies for Facilitating Learning in Natural Environments', *Environmental Education Research*, 15(2), 243–62, Available: https://doi.org/10.1080/13504620802711282.

Barrable, A. and Arvanitis, A. (2018) 'Flourishing in the Forest: Looking at Forest School through a Self-Determination Theory Lens', *Journal of Outdoor and Environmental Education*, 22, 39-55, Available: https://doi:10.1007/s42322-018-0018-5.

Barrow, R. and Woods, R. (2006) *An Introduction to Philosophy of Education*, 4th ed. Oxon: Routledge.

Baxter, L. (2011) *Voicing Relationships: A Dialogic Perspective.* London: Sage.

Bay, D.N. (2020) 'Examining the Play that Preschool Children Prefer and the Characteristics Shaping them using Draw and Tell Technique', *European Journal of Educational Sciences*, 7 (2), 91- 115, Available: http://dx.doi.org/10.19044/ejes.v7no2a7.

Bazeley, P. and Jackson, K. (2013) *Qualitative Data Analysis with Nvivo*. 2nd ed. London: Sage.

Beard, C. (2008) *Experiential Learning: The Development of a Pedagogic Framework for Effective Practice*. Doctoral Thesis, Sheffield Hallam University, Available: https://shura.shu.ac.uk/13095/1/Beard%20Experiental%20learning.pdf.

Beard, C. and Wilson, J.P. (2003) The Learning Combination Lock – An Experiential Approach to Learning Design, *Journal of European Industrial Training*, 27 (2/3/4), 88-97, Available: https://doi.org/10.1108/03090590310468912.

Beard, C. and Wilson, J.P. (2018) *Experiential Learning, A Practical Guide for Training, Coaching and Education*. 4th ed. London: KoganPage.

Bebbington, A. (2010) 'The Ability of A-level Students to Name Plants', *Journal of Biological Education*, 39 (2), 63-67, Available: https://doi.org/10.1080/00219266.2005.9655963.

Beigi, R. (2021) *Early Years Pedagogy in Practice, A Guide for Students and Practitioners.* Oxon: Routledge.

Bell, J. (2010) *Doing Your Research Project. A Guide for First-Time Researchers in Education, Health and Social Science*. 5th ed. New York: McGraw-Hill.

Bennett, J. (2006) 'Curricula and Primary Education in Ireland, North and South, 1922-1999', *Oideas*, 47, 7-31.

Bhattacharya, A. and Stern, N. (2020) *From Rescue to Recovery, to Transformation and Growth: Building a Better World after Covid-19*, Available: https://www.lse.ac.uk/GranthamInstitute/news/from-rescue-to-recovery-to-transformation-and-growth-building-a-better-world-after-covid-19/ [Accessed 10 Apr 2021].

Bilton, H. (2003) *Outdoor Play in the Early Years, Management and Innovation.* London: Fulton

Biodiversity Ireland (2020) *Farmer's Wildlife Calendar: Climate Tracker*, Available: https://www.biodiversityireland.ie/projects/additional-survey-schemes/farmers-wildlife-calendar-climate-tracker/ [Accessed 06 May 2020].

Bird Watch Ireland (2018) *Wren*, Available: https://www.birdwatchireland.ie/IrelandsBirds/Wren/tabid/434/Default.aspx [Accessed 09 Sep 2018].

Bird Watch Ireland (2020) *Garden Birds,* Available:

https://birdwatchireland.ie/irelands-birds-birdwatch-ireland/garden-birds/

[Accessed 06 May 2020].

Blaikie, N. (2010) *Designing Social Research.* 2nd ed. Cambridge: Polity Press.

Bloom, B.S. (1956) *Taxonomy of Educational Objectives: The Classification of Educational Goals.* New York: Longmans, Green.

Boehm, A. and Weinberg, R. (1997) *The Classroom Observer. Developing Observation Skills in Early Childhood Settings.*, 3rd ed. New York: Teachers College Press.

Bonfield, T. and Horgan, K. (2016) *Learning to Teach, Teaching to Learn.* Dublin: Gill Education.

Bonnett, M. (2007) 'Environmental Education and the Issue of Nature', *Journal of Curriculum Studies*, 39 (6), 707-721, Available: https://doi.org/10.1080/ 00220270701447149.

Bradford, D. (2018) 'Ethical Issues in Experiential Learning', *Journal of Management Education*, 43 (1), 89- 98, Available: https://doi.org/10.1177/1052562918807500.

Braun, V. and Clarke, V. (2006) Using Thematic Analysis in Psychology. *Qualitative Research in Psychology,* 3 (2), 77-101, Available: https://doi.org/10.1191/1478088706qp063oa.

British Educational Research Association (2018) *Ethical Guidelines for Educational Research*, 4th ed. Available: https://www.bera.ac.uk/publication/ethical-guidelines-for-educational-research-2018-online [Accessed 01 Jun 2018].

Broadhead, P. and Burt, A. (2012) *Understanding Young Children's Learning through Play, Building Playful Pedagogies.* Oxon: Routledge.

Bronfenbrenner, U. (1979) *The Ecology of Human Development:* Experiments by Nature and Design. Cambridge, Massachusetts: Harvard University Press.

Bronfenbrenner, U. and Crouter, A.C. (1983) 'The Evolution of Environmental Models in Developmental Research', in Mussen, P.H. (series ed.) and Kessen, W. (vol. ed.), *Handbook of Child Psychology, Vol 1: History, Theory and Methods.* New York: Wiley, 357- 414.

Bronfenbrenner, U. (1992) 'The Ecology of Cognitive Development: Research Models and Fugitive Findings', in R. H. Wozniak and K. Fischer, eds., *Scientific Environments*. Hillsdale, New Jersey: Erlbaum, 3 – 44.

Bronfenbrenner, U. and Ceci, S. J. (1993) 'Heredity, Environment and the Question "How?" A new theoretical perspective for the 1990s', in R. Plomin and G. E. McClearn, eds., *Nature, Nurture and Psychology*. Washington DC: American Psychological Society, 313 – 324.

Bronfenbrenner, U. and Ceci, S. J. (1994) 'Nature-Nurture Reconceptualized: A Bioecological Model', *Psychological Review*, 101, 568-586, Available: https://doi.org/10.1037/0033-295x.101.4.568.

Bronfenbrenner, U. (1995) 'Developmental Ecology through Space and Time: A Future Perspective', in P. Moen, G. H. Elder, Jr., and K. Lüscher, eds., *Examining Lives in Context: Perspectives on the Ecology of Human Development.* American Psychological Association, Available: https://doi.org/10.1037/10176-018, 619–647.

Bronfenbrenner, U. and Morris, P. A. (1998) 'The Ecology of Developmental Processes', in W. Damon and R. M. Lerner, eds., *Handbook of Child Psychology Vol 1, Theoretical Models of Human Development.* West Sussex: John Wiley and Sons, 993 – 1028.

Bronfenbrenner, U. (2005) *Making Human Beings Human, Bioecological Perspectives on Human Development*. London: Sage.

Bronfenbrenner, U. and Morris, P. A. (2006) 'The Bioecological Model of Human Development', in R. M. Lerner and W. E. Damon, eds., *Handbook of Child Psychology: Vol 1, Theoretical Models of Human Development*. West Sussex: John Wiley and Sons, 793- 828.

Brown, T. (1985) *Ireland: A Social and Cultural History 1922- 1985.* London: Fontana Press.

Brugge, B. (2007) 'Friluftsliv with Preschool Children' in Henderson, B. and Vikander, N., eds., *Nature First, Outdoor Life the Friluftsliv Way.* Ontario: Natural Heritage Books, 121- 129.

Brunner, J. (1960) *The Process of Education.* Cambridge: Harvard University Press.

Bubikova-Moan, J., Hjetland, H.N. and Wollscheid, S. (2019) 'ECE Teachers' Views on Play-Based Learning: A Systematic Review', *European Early Childhood Education Research Journal*, 27 (6), 776- 800, Available: https://doi.org/10.1080/1350293X.2019.1678717.

C

Cagliari, P., Castagnetti, M., Giudici, C., Rinaldi, C., Vecchi, V. and Moss, P. eds. (2006) *Loris Malaguzzi and the Schools of Reggio Emilia: A Selection of His Writings and Speeches,* London: Routledge.

Centre for Early Childhood Development and Education (2006) Síolta: The National Quality Framework for Early Childhood Education, Available: https://www.siolta.ie/media/pdfs/siolta-manual-2017.pdf [Accessed 10 Feb 2021].

Charmaz, K. (2006) *Constructing Grounded Theory. A Practical Guide Through Qualitative Analysis.* London: Sage.

Charmaz, K. (2014) *Constructing Grounded Theory.* 2nd ed. London: Sage.

Chawla, L., (2018). 'Nature-based Learning for Student Achievement and Ecological Citizenship', in Haeussler Bohan, C. and Tenam-Zemach, M., eds., *Curriculum and Teaching Dialogue*, Volume 20, Numbers 1 and 2, Information Age Publishing.

Cillessen, A.H.N. And Bellmore, A.D. (2004) 'Social Skills and Interpersonal Perception in Early and Middle Childhood' In Smith, P.K. And Hart, C.H., eds., *Blackwell Handbook of Childhood Social Development*, Oxford: Blackwell Publishing, 355- 374.

Circle of Life Rediscovery (2019) *Ireland Level 3 Certificate for Forest School Leaders*, Available: https://www.circleofliferediscovery.com/index.php?page=forest-school-training-ireland [Accessed 29 Apr 2019].

Coates, J.K. and Pimlott-Wilson, H. (2019) 'Learning While Playing: Children's School Experiences in the UK', *British Educational Research Journal*, 45 (1), 21-40, Available: https://doi.org/10.1002/berg.3491.

Cohen, L., Manion, L. and Morrison, K. (2000) *Research Methods in Education.* 5th ed. London: Routledge.

Cohen, L., Manion, L. and Morrison, K. (2004) *A Guide to Teaching Practice.* 5th ed. London: Routledge.

Cohen, L., Manion, L. and Morrison, K. (2011) *Research Methods in Education*. 7th ed. London: Routledge.

Coolahan, J. (1981) *Irish Education: Its History and Structure.* Dublin: Institute of Public Administration.

Cornell, J. (1989) *Sharing Nature with Children II. Formally Sharing the Joy of Nature.* Nevada City: Dawn Publications.

Cornell, J. (1998) *Sharing Nature with Children.* Nevada City: Dawn Publications.

Cornell, J. (2017) *Deep Nature Play: A Guide to Wholeness, Aliveness, Creativity, and Inspired Learning.* Nevada City: Crystal Clarity Publishers.

Cree, J. and McCree, M. (2013) *A Brief History of the Roots of Forest School in the UK*, Available: http://melmccree.com/wp/wp-content/uploads/2013/02/h60-fs-history-pt1.pdf [Accessed 06 Apr 2021].

Cree, J. and Robb, M. (2021) *The Essential Guide to Forest School and Nature Pedagogy.* Oxon: Routledge.

Creswell, J. (2009) *Research Design. Qualitative, Quantitative, and Mixed Methods Approaches.* 3rd ed. London: Sage.

Creswell, J. (2013) *Qualitative Inquiry and Research Design, Choosing Among Five Approaches.* 3rd ed. London: Sage.

Creswell, J.W. and Miller, D.L. (2000) 'Determining Validity in Qualitative Inquiry', *Theory into Practice,* 39 (3), 124- 130, Available: https://doi.org/10.1207/s15430421tip3903_2.

Crotty, M. (1998) *The Foundations of Social Research. Meaning and Perspective in the Research Process.* London: Sage.

Csikszentmihalyi, M. (1975) *Beyond Boredom and Anxiety: Experiencing Flow in Work and Play.* San Francisco: Jossey-Bass.

Csikszentmihalyi, M. (1990) *Flow: The Psychology of Optimal Experience.* New York: Harper and Row.

Csikszentmihalyi, M. (1996) *Creativity: Flow and the Psychology of Discovery and Invention.* New York: Harper Perennial.

Cullingford, C. (1989) 'The Teacher and the Purpose of Primary Education' in Cullinford, C., ed., *The Primary Teacher, The Role of the Educator and the Purpose of Primary Education.* London: Cassell Education Ltd, 7- 16.

Cumming, F. and Nash, M. (2015) 'An Australian Perspective of a Forest School: Shaping a Sense of Place to Support Learning', *Journal of Adventure Education and Outdoor Learning*, 15 (4), 296- 309, Available: https://doi.org/10.1080/14729679.2015.1010071.

Curaclam Na Bunscoile (1971) *Lámhleabh An Oide - Cuid a Dó.* Dublin: Stationery Office.

D

Dahlberg, G. (2012) 'Pedagogical Documentation: A Practice for Negotiation and Democracy' in Edwards, C., Gandini, L. and Forman, G., eds., *The Hundred Languages of Children.* 3rd ed. Oxford: England, 225- 233.

Dahlberg, G. and Moss, P. (2005) *Ethics and Politics in Early Childhood Education.* London: Routledge.

Dahlberg, G., Moss, P. and Pence, A. (1999) *Beyond Quality in Early Childhood Education and Care. Postmodern Perspectives.* London: Falmer Press.

Dalke, A., Cassidy, K., Grobstein, P. and Blank, D. (2007) 'Emergent Pedagogy: Learning to Enjoy the Uncontrollable- and Make it Productive', *Journal of Educational Change,* 8 (2), 111- 130, Available: https://doi.org/10.1007/s10833-007-9021-2.

Danaher, K. (1972) *The Year in Ireland: Irish Calendar Customs.* Dublin: The Mercier Press.

Dancy, J., Sosa, E. and Steup, M. (2010) *A Companion to Epistemology.* 2nd ed. Oxford: Blackwell.

Data Protection Act 2018, No.7/2018, Dublin: Stationery Office, Available: http://www.irishstatutebook.ie/eli/2018/act/7/enacted/en/html [Accessed 11 Jul 19].

Data Protection Commission (2018) Rights of Individuals under the General Data Protection Regulation, Available: https://www.dataprotection.ie/en/individuals [Accessed 01 Jul 19].

Davenport, H. (2019) 'Challenge and Compromise at Forest School', in Sackville-Ford, M. and Davenport, H., *Critical Issues in Forest Schools.* London: Sage, 21-33.

Delaney, S. (2017) *Become the Primary Teacher Everyone Wants to Have. A Guide to Career Success.* Oxon: Routledge.

Delrio, G. (2012) 'Our Responsibility Toward Young Children and Toward Their Community' in Edwards, C., Gandini, L. and Forman, G., eds., *The Hundred Languages of Children.* 3rd ed. Oxford: England, 81- 89.

Denham, S., von Salisch, M., Olthof, T., Kochanoff, A. And Caverly, S. (2004) 'Emotional and Social Development in Childhood' In Smith, P.K. And Hart, C.H., eds., *Blackwell Handbook of Childhood Social Development,* Oxford: Blackwell Publishing, 307- 329.

Department of Children and Youth Affairs (2004) *Ready, Steady, Play! A National Play Policy,* Available:

https://assets.gov.ie/24440/03bb09b94dec4bf4b6b43d617ff8cb58.pdf [Accessed 11 May 2020].

Department of Children and Youth Affairs (2012) *Guidelines for Developing Ethical Research Projects Involving Children*, Available:

https://www.childwatch.uio.no/news/2012/Ethics_Guidance%20Ireland.pdf [Accessed 01 Jun 2019].

Department of Children and Youth Affairs (2015) *National Strategy on Children and Young People's Participation in Decision-Making 2015-2020,* Available:

https://www.gov.ie/en/publication/9128db-national-strategy-on-children-and-young-peoples-participation-in-dec/ [Accessed 11 Jul 2019].

Department of Children and Youth Affairs (2017) *Children First, National Guidance for the Protection and Welfare of Children*, Available:

https://www.tusla.ie/uploads/content/Children_First_National_Guidance_2017.pdf [Accessed 06 Apr 2019].

Department of Children and Youth Affairs (2019) *Universal Design Guidelines for Early Learning and Care Settings,* Available: https://aim.gov.ie/wp-content/uploads/2019/06/universal-design-guidelines-for-elc-settings-introduction-1.pdf [Accessed 03 Mar 2021].

Department of Education and Science (1999) *Ready to Learn, White Paper on Early Childhood Education*, Available: https://www.education.ie/en/Publications/Policy-Reports/Ready-to-Learn-White-Paper-on-Early-Childhood-Education.pdf [Accessed 11 Feb 2021].

Department of Education and Science (2004) *A Brief Description of the Irish Education System.* Dublin: Communications Unit, Department of Education and Science.

Department of Education and Science (2005a) *DEIS An Action Plan for Educational Inclusion*, Available:

https://assets.gov.ie/24465/40677432ed49418d8c27bfb524f12a7b.pdf [Accessed 19 Mar 2019].

Department of Education and Science (2005b) *Special Ed. Circular 02/05: Organisation of Teaching Resources for Pupils who need Additional Support in Mainstream Primary Schools,* Dublin: Department of Education and Skills.

Department of Education and Skills (2007) *Special Educational Needs, A Continuum of Support.* Available:

https://assets.gov.ie/40642/674c98d5e72d48b7975f60895b4e8c9a.pdf [Accessed 05 Jan 2022].

Department of Education and Skills (2013) *Primary School Design Guidelines*, Available: file:///C:/Users/tocla/Downloads/93935_690717c2-1c44-4f9a-b2f4-9aa9c55eac22.pdf [Accessed 26 September 2021].

Department of Education and Skills (2016) *Looking at Our School. A Quality Framework for Primary Schools*, Available:

https://assets.gov.ie/25260/4a47d32bf7194c9987ed42cd898e612d.pdf [Accessed 15 Dec 2018].

Department of Education and Skills (2017) *Child Protection Procedures in Schools,* Available:

https://www.gov.ie/pdf/?file=https://assets.gov.ie/45063/2d4b5b3d781e4ec1ab4f3e5d198717d9.pdf#page=1 [Accessed 30 Jan 2021].

Department of Education and Skills (2017a) *Guidelines for Primary Schools, Supporting Pupils with Special Educational Needs in Mainstream Schools,* Available: https://www.gov.ie/en/publication/edf64-guidelines-for-primary-schools-supporting-pupils-with-special-educational-needs-in-mainstream-schools/ [Accessed 03 Mar 2021].

Department of Education and Skills (2019) *How were Schools Selected to Participate in DEIS?* Available: https://www.gov.ie/en/policy-information/4018ea-deis-delivering-equality-of-opportunity-in-schools/ [Accessed 25 May 2019].

Department of Education and Skills (2022) *Chief Inspector's Report, September 2016- September 2020.* Available: https://www.gov.ie/en/publication/611873-chief-inspector-reports/ [Accessed 03 Apr 2022].

Dewey, J. (1897) My Pedagogic Creed. *School Journal*, 54(3), 77–80.

Dewey, J. (1900) *The School and Society.* Chicago: University of Chicago Press.

Dewey, J. (1902) *The Child and the Curriculum*, Chicago: University of Chicago Press.

Dewey, J. (1916) *Democracy and Education: An Introduction to the Philosophy of Education*, New York: Macmillan.

Dewey, J. (1933) *How We Think: A Restatement of the Relation of Reflective Thinking to the Educative Process.* Boston: Houghton Mifflin.

Dewey, J. (1934) *Art as Experience*. New York: The Penguin Group.

Dewey, J. (1938a) *Experience and Education.* Illinois: Kappa Delta Pi.

Dewey, J. (1938b) *Logic the theory of Inquiry*. New York: Henry Holt and Company.

Dewey, J. (1958) *Experience and Nature*. New York: Dover Publications.

Diamond, K.E. (2004) 'The Development of Social Competence in Children with Disabilities' In Smith, P.K. And Hart, C.H., eds., *Blackwell Handbook of Childhood Social Development,* Oxford: Blackwell Publishing, 571- 588.

Didau, D. (2016) *What if Everything You Knew About Education was Wrong?* Cornwall: Crown House Publishing.

Digital Schools of Distinction (2022) Digital School of Distinction, Available: http://www.digitalschools.ie/ [Accessed 07 Jun 2022].

Dilthey, W. (1883) *An Introduction to the Human Sciences.* Princeton: Princeton University Press.

Dilthey, W. (1985) *Poetry and Experience.* Princeton: Princeton University Press

Dilthey, W. (2002) *The Formation of the Historical World in the Human Sciences*. Princeton: Princeton University Press.

Doherty, P. (1998) 'Learner Control in Asynchronous Learning Environments', *ALN magazine*, 2(2), 1- 13, Available: http://www.aln.org.

Doherty, T. (2016) 'Theoretical and Empirical Foundations for Ecotherapy' in Jordan, M. and Hinds, J., eds., *Ecotherapy. Theory, Research and Practice*. London: Palgrave, 12- 26.

Dolan, A.M. (2016) 'Place Based Curriculum Making Devising a Synthesis Between Primary Geography and Outdoor Learning', *Journal of Adventure Education and Outdoor Learning*, 16 (1), 49 – 62, Available: https://doi.org/10.1080/14729679.2015.1051563.

Dolan, A.M. (2022) 'Geography, Global Learning and Climate Justice: Geographical Aspects of Teaching Climate Change' in Dolan, A.M., ed., *Teaching Climate Change in Primary Schools, An Interdisciplinary Approach.* Oxon: Routledge.

Dolan, A.M. and O'Sullivan, E. (2022) 'Exploring Climate Change with an Historical Lens' in Dolan, A.M., ed., *Teaching Climate Change in Primary Schools, An Interdisciplinary Approach.* Oxon: Routledge.

Dowdell, K. Gray, T. and Malone, K. (2011) 'Nature and its Influence on Children's Outdoor Play', *Australian Journal of Outdoor Education*, 15 (2), 24- 35, Available: https://link.springer.com/article/10.1007/BF03400925.

Doyle, S. (2007) Member Checking with Older Women: A Framework for Negotiating Meaning. *Health Care for Women International*, 8(10), 888-908, Available: http://doi.org/10.1080/07399330701615325.

Dublin City University (2022) *Changemaker School Network,* Available: https://www.dcuchangemakernetwork.com [Accessed 07 Jun 2022].

E

Early Childhood Ireland. (2019) *Growing up Outdoors*, Available: https://www.earlychildhoodireland.ie/blog/growing-up-outdoors/ [Accessed 15 Jan 2019].

Edensor, T. (2010) 'Walking in Rhythms: Place, Regulation, Style and the Flow of Experience', *Visual Studies*, 25(1), 69-79, Available: https://doi.org/10.1080/14725861003606902.

Education Support Centres Ireland (2021) *Education Centre Courses Nationwide*, Available: https://esci.ie/cpd-courses.html [Accessed 05 Jan 2021].

Edwards, C. (2012) 'Teacher and Learner, Partner and Guide: The Role of the Teacher' in Edwards, C., Gandini, L. and Forman, G., eds., *The Hundred Languages of Children*. 3rd ed. Oxford: England, 147- 172.

Egan, D. (2020) An *Exploration of Psychological Wellbeing in Irish Forest Schools*, Doctoral Thesis, Mary Immaculate College Limerick, Available: https://dspace.mic.ul.ie/xmlui/handle/10395/2913.

Egan, S. and Pope, J. (2018) *Streets Ahead: Findings on Outdoor Play from the Growing Up in Ireland Study*, Available: https://www.growingup.ie/pubs/E3-Presentation-Egan-Pope.pdf [Accessed 10 Oct 2021].

Elliott, H. (2015) 'Forest School in an Inner City? Making the Impossible Possible', *International Journal of Primary, Elementary and Early Years Education* 3-13, 43 (6), 722 – 730, Available: https://doi.org/10.1080/03004279.2013.872159.

Engage with Nature (2020) *Paddy Madden's School Garden*, Available: https://www.schoolearthed.ie/paddys-school-garden/video-index.html [Accessed 06 May 20].

Ephgrave, A. (2018) *Planning in the Moment with Young Children. A Practical Guide for Early Years Practitioners and Parents.* London: Routledge.

Epigeum (2018) *Research Integrity.* Available: https://www.epigeum.com [Accessed 02 Jul 2019].

European Agency on Special Needs and Inclusive Education (2017a) *Raising the Achievement of All Learners in Inclusive Education,* Available: https://www.european-

agency.org/sites/default/files/raising_achievement_final_summary_report.pdf [Accessed 04 Jan 2022].

European Agency on Special Needs and Inclusive Education (2017b) *Raising the Achievement of all Learners: A Resource to Support Self-Review*, Available: https://www.european-agency.org/sites/default/files/raising_achievement_self-review.pdf [Accessed 04 Jan 2022].

F

Faarlund, N. (2007) 'Defining Friluftsliv' in Henderson, B. And Vikander, N., eds., *Nature First, Outdoor Life the Friluftsliv Way.* Ontario: Natural Heritage Books, 56-61.

Fallon, J. (2017) 'Hopeful Intentions: Planning for Playful Teaching and Learning' in Walsh, G., McMillan, D. and McGuinness, C., eds., *Playful Teaching and Learning*. London: Sage, 165- 184.

Fitzpatrick, J. (2017) 'Research Methods 2', *EN7722*: 1st Year Structured Ph.D. Cohort: 2016-20, 11 Mar, Mary Immaculate College, Limerick, unpublished.

Fjørtoft, I. (2001) 'The Natural Environment as a Playground for Children: The Impact of Outdoor Play Activities in Pre-Primary School Children', *Environmental Education* 29 (2), 111- 117, Available: https://doi.org/10.1023/A:1012576913074.

Flick, U. (2018) 'Triangulation', in Denzin, N.K. and Lincoln, Y.S., eds., *The Sage Handbook of Qualitative Research.* London: Sage, 444-461.

Fogarty, P. (2017) *Whittled Away, Ireland's Vanishing Nature*. Cork: The Collins Press.

Forest School Association (2018a) *History of Forest School*, Available: www.forestschoolassociation.org/history-of-forest-school/ [Accessed 05 Jun 2018].

Forest School Association (2018b) *Full Principles and Criteria for Good Practice*, Available: https://forestschoolassociation.org/full-principles-and-criteria-for-good-practice/ [Accessed 05 Jun 2018].

Forest School Association (2018c) *What is Forest School?*, Available:
https://forestschoolassociation.org/what-is-forest-school/ [Accessed 05 Jun 2018].

Forest School Ireland (2021) *Certification for Forest School Leaders*, Available:
https://forestschoolireland.ie/level-3-certification/ [Accessed 05 Jan 2021].

Forman, G. and Fyfe, B. (2012) 'Negotiated Learning through *Des*ign,
Documentation, and Discourse' in Edwards, C., Gandini, L. and Forman, G., eds., *The Hundred Languages of Children.* 3rd ed. Oxford: England, 247- 273.

Foucault, M. (1969) *The Archaeology of Knowledge.* London: Routledge.

Frankel, S. (2018) *Giving Children a Voice.* Philadelphia: Jessica Kingsley Publishers.

Freire, P. (1970) *Pedagogy of the Oppressed.* London: Penguin Books.

Froebel, F. (1826) *The Education of Man.* New York: A. Lovell and Company.

Fujifilm (2017) *Model Instax Mini 9 Polaroid.* Tokyo: Fujifilm.

G

Galvin, M. (2016) 'Epistemological and Ontological Foundations 1', *EN7711*: 1st Year
Structured Ph.D. Cohort: 2016-20, 5 Nov, Mary Immaculate College, Limerick,
unpublished.

Galway European Capital City of Culture 2020 (2020a) *Úlla Buaile,* Available:
https://galway2020.ie/en/projects/ulla-buaile/ [Accessed 06 May 2020].

Galway European Capital City of Culture 2020 (2020b) *Soineann nó Doineann: Hope it Rains,* Available: https://galway2020.ie/en/category/hope-it-rains/ [Accessed 06 May 2020].

Gardener, H. (1983) *Frames of Mind.* New York: Basic Books.

Gardner, D.E.M. and Cass, J.E. (1965) *The Role of the Teacher in the Infant and Nursery School.* London: Pergamon Press.

Gee, J.P. (2011) *How to do Discourse Analysis, A Toolkit*. London: Routledge.

Giannakaki, S., Flynn, P., Hayes, N. and Fitzsimons, S. (2018) *Teacher's Beliefs about*

Education and Children's Voice Practices in the Island of Ireland, Belfast: Standing Conference on Teacher Education North and South (SCOTENS), Available: https://scotens.org/site/wp-content/uploads/Teachers-Beliefs-about-Education-and-Childrens.pdf [Accessed 02 Jan 2022].

Gibson, J. (1979) *The Ecological Approach to Visual Perception.* Howe: Psychology Press.

Gore, J. (2018). *Improving the Quality of Teaching: Evidence from Diverse Methodological Perspectives.* Limerick: Mary Immaculate College.

Gray, C. (2013a) 'Reflective Practice: Experiential Learning in the Early Years', *International Journal of Early Years Education*, 21 (1), 1-3, Available: https://doi.org/10.1080/09669760.2013.782971.

Gray, P. (2013b) *Free to Learn. Why Unleashing the Instinct to Play Will Make Our Children Happier, More Self-Reliant and Better Students for Life.* New York: Basic Books.

Greenwood, R. (2017) 'Playful Learning in Natural Outdoor Environments' in Walsh, G., McMillan, D. And McGuinness, C., eds., *Playful Teaching and Learning*. London: Sage, 116- 132.

Greig, A.D., Taylor, J. and MacKay, T. (2007) *Doing Research with Children: A Practical Guide.* London: Sage.

Guskey, T.R. (2002) 'Does It Make a Difference? Evaluating Professional Development', *Educational Leadership*, 59 (6), 45-51, Available: https://uknowledge.uky.edu/cgi/viewcontent.cgi?article=1005&context=edp_facpub.

Guskey, T.R. (2009) 'Closing the Knowledge Gap on Effective Professional Development', *Educational Horizons*, 87 (4), 224-233, Available: https://files.eric.ed.gov/fulltext/EJ849021.pdf.

H

Haas, C. and Ashman, G. (2014) 'Kindergarten Children's Introduction to Sustainability through Transformative, Experiential Nature Play', *Australasian Journal of Early Childhood*, 39 (2), 21- 29, Available: https://doi:10.1177/183693911403900204.

Hall, T., Lashua, B., & Coffey, A. (2006) Stories as Sorties. *Qualitative Researcher,* 3(Summer), 2-4, Available:

http://www.cardiff.ac.uk/socsi/qualiti/QualitativeResearcher/QR_Issue3_06.pdf [Accessed 08 Aug 2018].

Han, M., Moore, N., Vukelich, C., and Buell, M. (2010) Does Play Make a Difference? Effects of Play Intervention on At-Risk Preschoolers' Vocabulary Learning', *American Journal of Play*,

3, 82-105, Available: https://eric.ed.gov/?id=EJ1070222.

Hansen Sandseter, E.B., Little, H. and Wyver, H.L. (2012) 'Do Theory and Pedagogy have an Impact on Provisions for Outdoor Learning? A comparison of approaches in Australia and Norway', *Journal of Adventure Education and Outdoor Learning*, 12 (3), 167 – 182, Available: https://doi.org/10.1080/14729679.2012.699800.

Harding, S. (2008) 'Outdoor Play and the Pedagogic Garden' in Moyles, J., ed. *The Excellence of Play.* 2nd ed. Berkshire: Open University Press, 138- 153.

Harris, F. (2017) 'The Nature of Learning at Forest School Practitioners' Perspectives', *International Journal of Primary, Elementary and Early Years Education* 3 - 13, 45 (2), 272 – 291, Available: https://doi.org/10.1080/03004279.2015.1078833.

Hart, C. (1998) *Doing a Literature Review. Releasing the Social Science Research Imagination.* London: Sage.

Haughton, C. and Ellis, C. (2016) 'Play', in Palaiologou, I., ed. *The Early Years Foundation Stage, Theory and Practice.* 3rd ed. Sage: London, 130- 148.

Hayes, N. and Kernan, M. (2008) *Engaging Young Children, A Nurturing Pedagogy*. Dublin: Gill and Macmillan.

Hayes, N., O'Toole, L. and Halpenny, A.M. (2017) *Introducing Bronfenbrenner.* Oxon: Routledge.

Heritage in Schools (2020) *The Heritage in Schools Scheme,* Available: http://www.heritageinschools.ie/about/how-it-works [Accessed 06 May 2020].

Hexacox, D. (2012) *Differentiating Instruction in the Regular Classroom.* Minneapolis: Free Spirit Publishing.

Hilgard, E.R. and Bower, G.H. (1975) *Theories of Learning.* New Jersey: Prentice Hall, Inc.

Hogan, P. (1995) *The Custody and Courtship of Experience: Western Education in Philosophical Perspective.* Dublin: The Columba Press.

Holmes, S. (2019) 'Play-based Interview Techniques with Young Children', in Brown, Z. and Perkins, H., *Using Innovative Methods in Early Years Research, Beyond the Conventional*. London: Routledge, 92-108.

Hopkins, F. (2011) 'Removing Barriers: Getting Children with Physical Challenges into the Woods', in Knight, S., *Forest School for All*. London: Sage, 121- 137.

Horseman, L. (2019) 'How Safe is Forest School?', in Sackville-Ford, M. and Davenport, H., *Critical Issues in Forest Schools.* London: Sage, 160-174.

Howden, E. (2012) 'Outdoor Experiential Education: Learning Through the Body', *New Direction for Adult and Continuing Education*, 134, 43 – 51, Available: https://doi.org/10.1002/ace.20015.

Hoyle, E. (1969) *The Role of the Teacher.* London: Routledge.

Huggins, V. and Wickett, K. (2017) 'Very Young Children Learning Outdoors: Its Place in the Schooling System' in Waite, S., ed., *Children Learning Outside the Classroom, From Birth to Eleven.* 2nd ed. London: Sage, 69- 82.

Hunter, T. and Walsh, G. (2014) 'From Policy to Practice?: The Reality of Play in Primary School Classes in Northern Ireland', *International Journal of Early Years Education,* 22 (1) 19 – 36, Available: https://doi.org/10.1080/09669760.2013.830561.

I

Irish Forest School Association (2019) *Training*, Available: https://irishforestschoolassociation.ie/training/ [Accessed 28 Apr 2019].

Irish Forest School Association Forum (2017) *Private Facebook Forum*. Cambridge, MA: Facebook, Inc, Available: www.facebook.com [Accessed 10 Oct 2017].

Irish Universities Association (2019) *Research Integrity,* Available: https://www.iua.ie/research-innovation/research-integrity/ [Accessed 01 Jun 2019].

Irvin, E. (2019) 'A School Perspective of Forest School', in Sackville-Ford, M. and Davenport, H., *Critical Issues in Forest Schools.* London: Sage, 109-121.

Irwin, J. (2018) *Towards a Values-Led Redevelopment of the Primary Curriculum*, Available: https://www.ncca.ie/media/3458/seminar_one_irwin_paper.pdf [Accessed 23 Sep 2018].

Irish National Teachers' Organisation (1992) *Social and Environmental Studies in Primary Education in Ireland: Current Issues and Concerns.* Dublin: INTO.

Irish National Teachers' Organisation (1996) *The Primary School Curriculum: An Evolutionary Process*. Dublin: INTO.

J

Jaeger, E.L. (2016) 'Negotiating Complexity: A Bioecological Systems Perspective on Literacy Development', *Human Development*, 59, 163-187.

James, M. (2018) *Forest School and Autism*. London: Jessica Kingsley Publishers.

Jones, P., Bunce, G., Evans, J., Gibbs, H., & Ricketts Hein, J. (2008) Exploring Space and Place with Walking Interviews. *Journal of Research Practice*, 4(2), Article D2,

Available: http://jrp.icaap.org/index.php/jrp/article/view/150/161 [Accessed 03 Jan 2018].

Jones, B. F., Valdez, G., Nowakowski, J. and Rasmussen, C. (1995) *Plugging In: Choosing and Using Educational Technology.* Washington: Council for Educational Development and Research.

Jordan, M. and Hinds, J. (2016) *Ecotherapy. Theory, Research and Practice.* London: Palgrave.

Jung, C. G. (1964) *Man and His Symbols*. Dell Publishing: New York.

K

Kahn, P. (2002) 'Children's Affiliations with Nature: Structure, Development, and the Problem of Environmental Generational Amnesia' in Kahn, P.H. And Kellert, S., eds*., Children and Nature*. London: The MIT Press, 93- 116.

Kant, I. (1787) *The Critique of Pure Reason.* Cambridge: Cambridge University Press.

Kant, I. (1788) *The Critique of Practical Reason.* Cambridge: Cambridge University Press.

Kant, I. (1790) *The Critique of the Power of Judgement.* Cambridge: Cambridge University Press.

Kellert, S. (2002) 'Experiencing Nature: Affective, Cognitive and Evaluative Development in Children' in Kahn, P.H. And Kellert, S., eds., *Children and Nature.* London: The MIT Press, 117- 153.

Kemp, N. (2019) 'Views from the Staffroom: Forest School in English Primary Schools', *Journal of Adventure Education and Outdoor Learning,* 20 (4), 369- 380, Available: https://doi.org/10.1080/14729679.2019.1697712.

Kernan, M. and Devine, D. (2010) 'Being Confined within? Constructions of the Good Childhood and Outdoor Play in Early Childhood Education and Care Settings in Ireland', *Children & Society*, 24, 371-385, Available: https://doi.org/10.1111/j.1099-0860.2009.00249.x.

Kincheloe, J. (2008) *Critical Constructivism.* New York: Peter Lang Publishing.

Knight, S. (2011) *Forest School and Outdoor Learning in the Early Years*. London: Sage.

Knight, S. (2013) *Forest School and Outdoor Learning in the Early Years*. 2nd ed. London: Sage.

Knight, S. (2018) 'Translating Forest School: A Response to Leather', *Journal of Outdoor and Environmental Education*, 21, 19 – 23, Available: https://doi.org/10.1007/s42322-017-0010-5.

Knowles, A. (2016) 'Working in Partnership with Parents', in Palaiologou, I., ed., *The Early Years Foundation Stage, Theory and Practice.* London: Sage, 251- 265.

Kolb, D. A. (1984) *Experiential Learning: Experience on the Source of Learning and Development.* Englewood Cliffs: Prentice-Hall.

Kolb, D.A., Boyatzis, R.E. and Mainemelis, C. (2001) 'Experiential Learning Theory: Previous Research and New Directions', in Sternberg, R.J. and Zhang, L., eds., *Perspectives on Thinking, Learning, and Cognitive Styles.* New York: Routledge, 227- 249.

Kuo, M., Barnes, M. and Jordan, C. (2019) 'Do Experiences with Nature Promote Learning? Converging Evidence of a Cause-and-Effect Relationship', *Frontiers in Psychology*, 10, Available: https://doi.org/10.3389/fpsyg.2019.00305.

Kvale, S. (2012) *Doing Interviews*. London: Sage.

L

Lamb, C. (2011) 'Forest School- A Whole School Approach', in Knight, S., *Forest School for All*. London: Sage, 28- 41.

Lather, P. (2006) 'Paradigm proliferation as a good thing to think with: Teaching research in education as a wild profusion', *International Journal of Qualitative Studies in Education*, 19 (1), 35-57, Available: https://doi.org/10.1080/09518390500450144.

Lave, J. and Wenger, E. (2016) *Situated Learning, Legitimate Peripheral Participation.* Cambridge: Cambridge University Press.

Leather, M. (2012) 'Seeing The Wood From The Trees: Constructionism and Constructivism for Outdoor and Experiential Education'. *Philosophical Perspectives in Outdoor Education*. Philosophy of Education Society of Great Britain Edinburgh Branch Conference, Available: https://www.researchgate.net/publication/316547961_Seeing_the_wood_from_the_trees_constructionism_and_constructivism_for_outdoor_and_experiential_education [Accessed 26 Aug 2019].

Leather, M. (2013) 'Lost in Translation: A Critique of 'Forest School' in the UK', *Future Faces: Outdoor Education Research Innovations and Visions*, 93, Available: https://link.springer.com/journal/42322.

Leather, M. (2018) 'A Critique of "Forest School" or Something Lost in Translation', *Journal of Outdoor and Environmental Education,* 21, 5 – 18, Available: https://doi.org/10.1007/s42322-017-0006-1.

Leave no Trace Ireland (2020) '7 Principles of Leave no Trace', Available: https://www.leavenotraceireland.org/education/education-introduction/ [Accessed 28 May 2020].

Lee, E.Y., de Lannoy, L., Li, L., de Barros, M.I.A., Bentsen, P., Brussoni, M., Fiskum, T.A., Guerrero, M., Hallas, B.O., Ho, S., Jordan, C., Leather, M., Mannion, G., Moore, S.A., Hansen Sandseter, E.B., Spencer, N.L.I., Waite, S., Wang, P., Tremblay, M.S. (2022) Play, Learn, and Teach Outdoors-Network (PLaTO-Net): Terminology, Taxonomy, and Ontology, *International Journal of Behavioral Nutrition and Physical Activity*, 19(1), 1-20, Available: https://doi.org/10.1186/s12966-022-01294-0.

Lee-Hammond, L. and Jackson-Barrett, E. (2013) 'Aboriginal Children's Participation and Engagement in Bush School', in Knight, S. ed. *International Perspectives on Forest School: Natural Spaces to Play and Learn,* London: Sage, 131-145.

Leininger, M. (1985) *Qualitative Research Methods in Nursing.* Orlanda: Grune and Stratton.

Lewis, A and Norwich, B. (2001) 'Mapping a Pedagogy for Special Educational Needs', *British Educational Research Journal,* 27 (3), 313- 329, Available: https://doi.org/10.1080/01411920120048322.

Lillard, A. (2004) 'Pretend Play and Cognitive Development' In Goswami, U., ed., *Blackwell Handbook of Childhood Cognitive Development,* Oxford: Blackwell Publishing, 188- 205.

Lloyd, A., Truong, S. And Gray, T. (2018) 'Place-Based Outdoor Learning: More than a Drag and Drop Approach', *Journal of Outdoor and Environmental Education,* 21, 45 – 60, Available: http://doi.org/10.1007/s42322-017-0002-5.

Locke, J. (1690) *An Essay Concerning Human Understanding.* London: Thomas Basset.

Locke, J. (1693) *Some Thoughts Concerning Education.* London: A. and J. Churchill at the Black Swan in Paternoster-row.

Locke, T. (2017) *Tales of the Irish Hedgerows.* Dublin: The History Press.

Louv, R. (2005) *Last Child in the Woods: Saving our Children from Nature-Deficit Disorder.* New York: Workman Publishing.

Louv, R. (2009) 'Children and Nature: The Great Disconnect' in Buzzell, L. and Chalquist, C. eds., *Ecotherapy*. Berkeley: Counterpoint, 205- 210.

Loynes, C. (2007) 'Why Outdoor Learning Should Get Real' in Henderson, B. And Vikander, N., eds., *Nature First, Outdoor Life the Friluftsliv Way*. Ontario: Natural Heritage Books, 257- 275.

Luff, P. (2016) 'Observations; Recording and Analysis', in Palaiologou, I., ed., *The Early Years Foundation Stage, Theory and Practice.* London: Sage, 148- 165.

Lund, K. (2012) 'Landscapes and Narratives: Compositions and the Walking Body', *Landscape Research,* 37 (2), 225-237, Available: https://doi.org/10.1080/01426397.2011.651111.

Lynch, J. (2020) Mobile Methods in Outdoor Studies: Walking Interviews with Educators, in B. Humberstone and H. Prince, eds., *Research Methods in Outdoor Studies*. London: Routledge, 207-217.

M

MacCoitir, N. (2018) *Ireland's Trees. Myths, Legends and Folklore.* Cork: Collins Press.

Mackinder, M. (2017) Footprints in the Woods, Tracking a Nursery Child through a Forest School Session. *International Journal of Primary, Elementary and Early Years Education* 3-13, 45 (2), 176 – 190, Available:

https://doi.org/10.1080/03004279.2015.1069368.

MacNaughton, G. (2005) *Doing Foucault in Early Childhood Studies. Applying Poststructural Ideas.* London: Routledge.

Madden, P.A. (2019) *An Exploration of the State and Status of Nature Awareness, Appreciation and Education in the Irish Primary School System,* Doctoral Thesis, Trinity College Dublin, Available: https://hdl.handle.net/2262/86162.

Mannion, G., Fenwick, A., and Lynch, J. (2013) 'Place-Responsive Pedagogy: Learning from Teachers' Experiences of Excursions in Nature', *Environmental Education Research.* 19, 792-809, Available:

https://doi.org/10.1080/13504622.2012.749980.

Marshall, C. and Rossman, G. (1999) *Designing Qualitative Research*. 3rd ed. London: Sage.

Martlew, J., Ellis, J. and Stephen, C. (2011) 'Play in the Primary School Classroom? The Experiences of Teachers Supporting Children's Learning through a New Pedagogy', *Early Years An International Journal of Research and Development*, 31 (1), 71-83, Available: https://doi.org/10.1080/09575146.2010.529425.

Mary Immaculate College (2020) *Play and Learning in the Early Years Survey-Impact of the Covid-19 Crises on Children, Preliminary Findings,* Available:

https://www.mic.ul.ie/sites/default/files/uploads/241/Impact%20of%20COVID19%

20on%20Young%20Childrens%20Play%2C%20Learning%20%26%20Development%
20-%20PLEY%20Survey%20Preliminary%20Findings.pdf [Accessed 10 Apr 2021].

Maslow, A. H. (1943) 'A Theory of Human Motivation', *Psychological Review.* 50 (4), 370–396, Available: https://doi.org/10.1037/h0054346.

Mat Noor, M.S.A., and Shafee, A. (2020) The Role of Critical Friends in Action Research: A Framework for Design and Implementation, *Practitioner Research,* 3, 1-33, Available: https://doi.org/10.32890/pr2021.3.1.

Maxwell, J.A. (2013) *Qualitative Research Design: An Interactive Approach.* 3rd ed. London: Sage.

Maynard, T. (2007) 'Encounters with Forest School and Foucault: A Risky Business?', *Education.* 35 (4), 3-13, Available: https://doi.org/10.1080/03004270701602640.

Maynard, T. and Waters, J. (2007) 'Learning in the Outdoor Environment: A Missed Opportunity?', *Early Years, an International Research Journal,* 27 (3) pp. 255 – 264, Available: https://doi.org/10.1080/09575140701594400.

Maynard, T., Waters, J. and Clement, J. (2013) 'Child-Initiated Learning, the Outdoor Environment and the 'Underachieving' Child', *Early Years, an International Research Journal,* 33 (3) 212 – 225, Available: https://doi.org/10.1080/09575146.2013.771152.

McCree, M. (2019) 'When Forest School isn't Forest School' in Sackville-Ford, M. and Davenport, H., *Critical Issues in Forest Schools.* London: Sage, 3-21.

McGee-Brown, M.J. (1995) 'Multiple Voices, Contexts, and Methods: Making Choices in Qualitative Evaluation in Early Childhood Education Settings' in Hatch, J.A., ed., *Qualitative Research in Early Childhood Settings*. London: Praeger, 191-212.

Mellon, N. (2000) *Storytelling with Children.* Gloucestershire: Hawthorn Press.

Mercogliano, C. (2007) *In Defence of Childhood, Protecting Kids' Inner Wildness.* Boston: Beacon Press.

Microsoft (2019) *OneNote.* New Mexico: Microsoft.

Microsoft (2020) *Word.* New Mexico: Microsoft.

Microsoft (2021) *PowerPoint*. New Mexico: Microsoft.

Milchem, K. (2011) 'Breaking Through Concrete- The Emergence of Forest School in London', in Knight, S., *Forest School for All*. London: Sage, 13- 28.

Miles, M.B. and Huberman, A.M. (2019) *Qualitative Data Analysis, A Methods Sourcebook.* 4th ed. London: Sage.

Miller, L., Devereux, J., Paige-Smith, A and Soler (2012) 'Approaches to Curricula in the Early Years', in Cable, C., Miller, L. and Goodliff, G. eds., *Working with Children in the Early Years* 2nd ed. London: Routledge, 75- 88.

Mills, A., Durepos, G. and Wiebe, E. (2010) *Encyclopaedia of Case Study Research.* Thousand Oaks: Sage.

Mitchell, K.L. (2019) *Experience Inquiry, 5 Powerful Strategies, 50 Practical Experiences.* London: Sage.

Montessori, M. (1949) *The Absorbent Mind.* Madras: The Theosophical Publishing House.

Moon, J.A. (2004) *A Handbook of Reflective and Experiential Learning: Theory and Practice.* London: Routledge Falmer.

Moore, M. (2019) *Supporting Sustainable School Practice within a Partnership Model*, Doctoral Thesis, Waterford Institute of Technology, Available: https://repository.wit.ie/3466/1/PhD%20New.pdf.

Morgan, A. (2018) 'Culturing the Fruits of the Forest: Realising the Multifunctional Potential of Space and Place in the Context of Woodland and/or Forest Schools', *Journal of Outdoor and Environmental Education*, 21, 117 – 130, Available: https://doi.org/10.1007/s42322-017-0008-z.

Morrissey, A. (2013) Calm, Active and Focused: Children's responses to an Organic Outdoor Learning Environment. *Learning Environment Research,* 16, pp. 281 – 295.

Moyles, J. (2008) *The Excellence of Play.* 2nd ed. Berkshire: Open University Press.

Muir Laws, J. and Lygren, E. (2020) *How to Teach Nature Journaling.* Berkeley: Heyday.

Murphy, B. (2004) Practice in Irish Infant Classrooms in the Context of the Irish Primary School Curriculum (1999): Insights from a Study of Curriculum Implementation. *International Journal of Early Years Education,* 12 (3), 245 – 257, Available: https://doi.org/10.1080/0966976042000268717.

Murphy, M.C. (2016) 'Forest Schools and how it is Linked with Art*?*', *Claire's Primary School Art,* 10 April, Available:

https://clairesprimaryschoolart.blogspot.com/search/label/Forest%20School [Accessed 28 Apr 2019].

Murphy, M.C. (2018) 'Exploring the 'Construction' strand in the Irish Primary School Visual Arts Curriculum through the Forest School Approach*', Journal of Adventure Education and Outdoor Learning.* 18 (2), 1- 19, Available:

https://doi.org/10.1080/14729679.2018.1443481.

Murphy, M.C. (2019) *Series of Beech Tree Drawings*. Procreate App, Apple.

Murphy, M.C. (2020) 'Bronfenbrenner's Bio-ecological Model: A Theoretical Framework to Explore the Forest School Approach?', *Journal of Outdoor and Environmental Education.* 23, 191-205, Available*:* https://doi.org/10.1007/s42322-020-00056-5.

Murphy, M.C. (2022) *Series of Beech Tree Drawings*. Procreate App, Apple.

Murray, R. and O'Brien, L. (2005) 'Such Enthusiasm- A Joy to See, An Evaluation of Forest School in England', *Forest Research,* Available:

https://www.forestresearch.gov.uk/documents/1418/ForestSchoolEnglandReport.pdf.

N

National Council for Curriculum and Assessment (1999a) *Introduction to the Primary School Curriculum.* Dublin: Government of Ireland Publications.

National Council for Curriculum and Assessment (1999b) *Primary School Curriculum: Mathematics.* Dublin: Government of Ireland Publications.

National Council for Curriculum and Assessment (1999c) *Primary School Curriculum: History.* Dublin: Government of Ireland Publications.

National Council for Curriculum and Assessment (1999d) *Primary School Curriculum: Geography.* Dublin: Government of Ireland Publications.

National Council for Curriculum and Assessment (1999e) *Primary School Curriculum: Science.* Dublin: Government of Ireland Publications.

National Council for Curriculum and Assessment (1999f) *Primary School Curriculum: Visual Arts.* Dublin: Government of Ireland Publications.

National Council for Curriculum and Assessment (1999g) *Primary School Curriculum: Music.* Dublin: Government of Ireland Publications.

National Council for Curriculum and Assessment (1999h) *Primary School Curriculum: Drama.* Dublin: Government of Ireland Publications.

National Council for Curriculum and Assessment (1999i) *Primary School Curriculum: Social, Political and Health Education.* Dublin: Government of Ireland Publications.

National Council for Curriculum and Assessment (1999j) *Primary School Curriculum: Physical Education.* Dublin: Government of Ireland Publications.

National Council for Curriculum and Assessment (1999k) *Primary School Curriculum: Mathematics, Teacher Guidelines.* Dublin: Government of Ireland Publications.

National Council for Curriculum and Assessment (1999l) *Primary School Curriculum: History, Teacher Guidelines.* Dublin: Government of Ireland Publications.

National Council for Curriculum and Assessment (1999m) *Primary School Curriculum: Geography, Teacher Guidelines.* Dublin: Government of Ireland Publications.

National Council for Curriculum and Assessment (1999n) *Primary School Curriculum: Science, Teacher Guidelines.* Dublin: Government of Ireland Publications.

National Council for Curriculum and Assessment (1999o) *Primary School Curriculum: Visual Arts, Teacher Guidelines.* Dublin: Government of Ireland Publications.

National Council for Curriculum and Assessment (1999p) *Primary School Curriculum: Music, Teacher Guidelines.* Dublin: Government of Ireland Publications.

National Council for Curriculum and Assessment (1999q) *Primary School Curriculum: Drama, Teacher Guidelines.* Dublin: Government of Ireland Publications.

National Council for Curriculum and Assessment (1999r) *Primary School Curriculum: Social, Political and Health Education, Teacher Guidelines.* Dublin: Government of Ireland Publications.

National Council for Curriculum and Assessment (1999s) *Primary School Curriculum: Physical Education, Teacher Guidelines.* Dublin: Government of Ireland Publications.

National Council for Curriculum and Assessment (2007) *Assessment in the Primary School Curriculum, Guidelines for Schools*. Dublin: Government of Ireland Publications.

National Council for Curriculum and Assessment (2009a) *Aistear: The Early Childhood Curriculum Framework*, Available: http://www.ncca.biz/Aistear/pdfs/PrinciplesThemes_ENG/PrinciplesThemes_ENG.pdf [Accessed 06 Jun 2018].

National Council for Curriculum and Assessment (2009b) *How Aistear was Developed: Research Papers,* Available: https://ncca.ie/en/resources/how-aistear-was-developed-research-papers/ [Accessed 11 May 2020].

National Council for Curriculum and Assessment (2010) *Curriculum Overload in Primary Schools, An Overview of National and International Experiences*, Available: https://ncca.ie/media/2052/curriculum_overload_in_primary_schools_an_overview_of_national_and_international_experiences.pdf [Accessed 14 Feb 2021].

National Council for Curriculum and Assessment (2016) *Primary Language Curriculum, Stages 1-2*, Available: https://curriculumonline.ie/getmedia/2a6e5f79-6f29-4d68-b850-379510805656/PLC-Document_English.pdf [Accessed 11 Jul 2018].

National Council for Curriculum and Assessment (2018a) *Primary Developments: Consultation on Curriculum Structure and Time, Final Report*, Available: https://ncca.ie/media/3242/primary-developments_consultaion-on-curriculum-structure-and-time_final-report.pdf [Accessed 28 Oct 2020].

National Council for Curriculum and Assessment (2018b) *Primary Mathematics Curriculum*, *Draft Specification, Junior Infants to Second Class,* Available: https://ncca.ie/media/3148/primary_mathsspec_en.pdf [Accessed 19 Jan 2021].

National Council for Curriculum and Assessment (2019) *Primary Language Curriculum*, *Stages 1-4,* Available: https://curriculumonline.ie/getmedia/2a6e5f79-6f29-4d68-b850-379510805656/PLC-Document_English.pdf [Accessed 19 Jan 2021].

National Council for Curriculum and Assessment (2020) *Draft Primary Curriculum Framework, For Consultation*, Available: https://ncca.ie/media/4870/en-primary-curriculum-framework-dec-2020.pdf [Accessed 02 Jan 2021].

National Council for Special Education (2012) *The Education of Students with Challenging Behaviour Arising from Severe Emotional Disturbance/ Behavioural Disorders,* Available: https://ncse.ie/wp-content/uploads/2014/09/EBDPolicyReport_1.pdf [Accessed 02 Jan 2021].

National Council for Special Education (2017) *Information Booklet for Parents of Children and Young People with Special Educational Needs,* Available: https://ncse.ie/wp-content/uploads/2019/07/Web-Ready-03178-NCSE-Children-SEN-InfoBook-Parents2-Proof17-VISUAL-ONLY.pdf [Accessed 03 Apr 20].

National Council for Special Education (2021a) *Behaviour Management*, *Collegial Support,* Available: https://www.sess.ie/sites/default/files/Resources/Behaviour_Resource_Bank/Advice%20Sheet%2014%20Collegial%20Support.pdf [Accessed 25 Feb 2021].

National Council for Special Education (2021b) *Behaviour Management*, *Arrival to and Exit from Classroom: Routine,* Available: https://www.sess.ie/sites/default/files/Resources/Behaviour_Resource_Bank/Advic

e%20Sheet%204%20Arrival%20to%20and%20Exit%20from%20Classroom%20-%20Routine.pdf [Accessed 25 Feb 2021].

National Council for Special Education (2021c) *Behaviour Management*, *Behaviour Contracts,* Available:

https://www.sess.ie/sites/default/files/Resources/Behaviour_Resource_Bank/Advice%20Sheet%205%20Behaviour%20Contracts.pdf [Accessed 25 Feb 2021].

National Council for Special Education (2021d) *Behaviour Management*, *Checking the Physical Classroom Environment,* Available:

https://www.sess.ie/sites/default/files/Resources/Behaviour_Resource_Bank/Advice%20Sheet%2010%20Checking%20the%20Physical%20Classroom%20Environment.pdf [Accessed 25 Feb 2021].

National Council for Special Education (2021e) *Behaviour Management*, *Active Listening: Listening to Pupils in a Non-Confrontational Manner,* Available:

https://www.sess.ie/sites/default/files/Resources/Behaviour_Resource_Bank/Advice%20Sheet%201%20Active%20Listening.pdf [Accessed 25 Feb 2021].

National Council for Special Education (2021f) *Behaviour Management*, *Choice for Pupils,* Available:

https://www.sess.ie/sites/default/files/Resources/Behaviour_Resource_Bank/Advice%20Sheet%2011%20Choice%20for%20Pupils.pdf [Accessed 25 Feb 2021].

National Council for Special Education (2021g) *Behaviour Management*, *Directive Statements,* Available:

https://www.sess.ie/sites/default/files/Resources/Behaviour_Resource_Bank/Advice%20Sheet%2017%20%20Directive%20Statements.pdf [Accessed 25 Feb 2021].

National Council for Special Education (2021h) *Behaviour Management*, *Follow-Up/Repair and Rebuild,* Available:

https://www.sess.ie/sites/default/files/Resources/Behaviour_Resource_Bank/Advice%20Sheet%2018%20%20Follow-up%20Repair%20and%20Rebuild.pdf [Accessed 25 Feb 2021].

National Council for Special Education (2021i) *Behaviour Management*, *Teaching Self-management,* Available: https://www.sess.ie/sites/default/files/Resources/Behaviour_Resource_Bank/Advice_Sheet_34_Teaching_Self_Management.pdf [Accessed 25 Feb 2021].

National Parks and Wildlife Service (NPWS) (2021) *Special Areas of Conservation,* Available: https://www.npws.ie/protected-sites/sac [Accessed 30 Jan 2021].

Navarro, J., Stephens, C., Rodrigues, B.C., Walker, I.A., Cook, O., O'Toole, L., Hayes, N. and Tudge, J.R. (2022) 'Bored of the Rings: Methodological and Analytic Approaches to Operationalizing Bronfenbrenner's PPCT model in Research Practice', *Journal of Family Theory and Review*. 14 (2) 233-253, Available: https://doi.org/10.1111/jftr.12459.

Nikon (2009) *Model D3000.* Tokyo: Nikon.

Noddings, N. (2003) *Happiness and Education.* New York: Cambridge University Press.

O

O'Brien, L. (2009) 'Learning Outdoors: The Forest School Approach', *Education.* 37 (1), 45 – 60, Available: https://doi.org/10.1080/03004270802291798.

O'Brien, L. and Murray, R. (2006) *A Marvellous Opportunity for Children to Learn. A Participatory Evaluation of Forest School in England and Wales.* Surrey: Forest Research.

O'Dwyer, A. (2022) 'Exploring Climate Change Education Outside the Classroom' in Dolan, A.M., ed., *Teaching Climate Change in Primary Schools, An Interdisciplinary Approach*. Oxon: Routledge.

Olsson, L.M. (2009) *Movement and Experimentation in Young Children's Learning. Deleuze and Guattari in Early Childhood Education.* London: Taylor and Francis.

Olsson, L.M., Dahlberg, G. and Theorell, E. (2016) 'Displacing Identity- Placing Aesthetics: Early Childhood Literacy in a Globalized World', *Discourse: Studies in the*

Cultural Politics of Education, 37, (5), 717- 738, Available:
https://doi.org/10.1080/01596306.2015.1075711.

Olympus (2016) *Model LS-P1*. London: Olympus.

Ord, J. and Leather, M. (2011) 'The Substance Beneath the Labels of Experiential
Learning: The Importance of John Dewey for Outdoor Educators', *Journal of
Outdoor and Environmental Education,* 15, (2), 13-23, Available:
https://doi.org/10.1007/BF03400924.

O'Rourke, T. (2018) *Towards an Overview for the Redeveloped Primary School
Curriculum: Learning from the past, learning from others*, Available:
https://www.ncca.ie/media/3459/seminar_one_walsh_paper.pdf [Accessed 23 Sep
2018].

O'Sullivan, L. and Ring, E. (2021) 'A Potpourri of Philosophical and Child
Development Research-based Perspectives as A Way Forward for Early Childhood
Curricula and Pedagogy: Reconcilable Schism or Irreconcilable Severance?', *Early
Childhood Development and Care,* Available:
https://doi.org/10.1080/03004430.2020.1871334.

Owens, P. (2005) 'Children's Environmental Values in the Early Schools Years',
International Research in Geographical and Environmental Education, 14 (4), 323-
329, Available: https://doi.org/10.1080/10382040508668366.

O'Toole, L. (2016) *A Bio-ecological Perspective on Educational Transition:
Experiences of Children, Parents and Teachers*. Doctoral Thesis, Technological
University Dublin, Available: https://doi.org/10.21427/D7GP4Z.

Ó Séaghdha, D. (2018a) 'The Irish For: The word deatach, meaning smoke, also
refers to the family huddled together around the fire', *TheJournal.ie*, 16 Dec,
Available: https://www.thejournal.ie/readme/the-irish-for-the-word-deteach-
meaning-smoke-also-refers-to-the-family-grouping-who-would-be-huddled-
together-around-the-fire-4395472-Dec2018 [Accessed 19 Mar 2020].

Ó Séaghdha, D. (2018b) 'The Irish For: As the nights are closing in - curl up by the
fire and learn some winter words', *TheJournal.ie*, 02 Dec, Available:

https://www.thejournal.ie/readme/the-irish-for-the-nights-are-closing-in-so-curl-up-by-the-fire-and-learn-some-winter-words-4367714-Dec2018/ [Accessed 19 Mar 2020].

Ó Séaghdha, D. (2018c) 'The Irish For... You'll find some of the most beautiful autumnal words as Gaeilge', *TheJournal.ie*, 07 Oct, Available: https://www.thejournal.ie/readme/irish-words-for-autumn-4265770-Oct2018 [Accessed 19 Mar 2020].

Ó Séaghdha, D. (2018c) 'The Irish For... How the Vikings influenced the Irish language', *TheJournal.ie*, 21 Oct, Available: https://www.thejournal.ie/readme/the-irish-for-how-the-vikings-influenced-the-irish-language-and-last-names-4295363-Oct2018 [Accessed 19 Mar 2020].

P

Palaiologou, I. (2019) *Child Observation, A Guide for Students of Early Childhood.* 4th ed. London: Sage.

Palmer, S. (2015) *Toxic Childhood.* London: Orion Books Ltd.

Papatheodorou, T. (2008) 'Play and Special Needs' in Moyles, J., ed. *The Excellence of Play.* 2nd ed. Berkshire: Open University Press, 39- 56.

Patrick, P. and Dale Tunnicliffe, S. (2011) 'What Plants and Animals Do Early Childhood and Primary Students' Name? Where Do They See Them?', *Journal of Science Education and Technology*, 20 (5), 630-642, Available: https://doi.org/10.1007/s10956-011-9290-7.

Patton, M.Q. (2015) *Qualitative Research and Evaluation Methods*. 4th ed. London: Sage.

Piaget, J. (1936) *Origins of Intelligence in the Child.* London: Routledge and Kegan Paul.

Piaget, J. (1945) *Play, Dreams and Imitation in Childhood.* London: Heinemann.

Piaget, J. and Inhelder, B. (1973) *Memory and Intelligence.* New York: Basic Books.

Pink, S. (2007) 'Walking with Video', *Visual Studies*, 22(3), 240-252, Available: https://doi.org/10.1080/14725860701657142.

Play Scotland (2019) *Getting it Right for Play, A Toolkit to Assess and Improve Local Play Opportunities,* Available: https://www.playscotland.org/wp-content/uploads/assets/Toolkit.pdf [Accessed 11 May 2020].

Podmore, V.N. and Luff, P. (2012) *Observation, Origins and Approaches in Early Childhood.* Berkshire: Open University Press.

Pyle, R. (2011) *The Thunder Tree.* Corvallis: Oregon State University Press.

Pyle, A. and Danniels, E. (2017) 'A Continuum of Play-Based Learning: The Role of the Teacher in Play-Based Pedagogy and the Fear of Hijacking Play', *Early Education and Development,* 28 (3), 274- 289, Available: https://doi.org/10.1080/10409289.2016.1220771.

Q

Quality and Qualifications Ireland (2009) *Qualifications Can Cross Boundaries - A Rough Guide to Comparing Qualifications in the UK and Ireland*. Available: https://qhelp.qqi.ie/learners/qualifications-recognition-advice/comparing-qualifications-in-the-uk-and-ireland/Qualifications_Can_Cross_Boundaries.pdf [Accessed 27 Oct 2020].

Quay, J. and Seaman, J. (2013) *John Dewey and Education Outdoors: Making Sense of the 'Educational Situation' through more than a Century of Progressive Reforms.* Rotterdam: Sense Publishers.

QSR International (2018) *NVivo 12*, Melbourne: Australia.

R

Ravitch, S, M, and Carl, N.M. (2016) *Qualitative Research, Bridging the Conceptual, Theoretical and Methodological*. Thousand Oaks: Sage.

Ravitch, S.M. and Riggan, M. (2017) *Reason and Rigor, How Conceptual Frameworks Guide Research*. 2nd ed. Thousand Oaks: Sage.

Reich, K. (2009) 'Constructivism: Diversity of Approaches and Connections with Pragmatism', in Hickman, L.A., Neubert, S. and Reich, K., *John Dewey, Between Pragmatism and Constructivism.* New York: Fordham University Press.

Resnick, M. and Johnson, A.T. (2020) 'Discussion-Case Analysis for Facilitating Pre-Service Teachers' Exploration of Play in the Early Childhood Classroom', *Networks: An Online Journal for Teacher Research*, 22 (3), Available: https://doi.org/10.4148/2470-6353.1320.

Richard, J.F., Fonzi, A., Tani, F., Tassi, F., Tomada, G. And Schneider, B.H. (2004) 'Cooperation and Competition' In Smith, P.K. And Hart, C.H., eds., *Blackwell Handbook of Childhood Social Development*, Oxford: Blackwell Publishing, 515- 533.

Ridgers, N., Knowles, Z. and Sayers, J. (2012) 'Encouraging Play in the Natural Environment: A Child-Focused Case Study of Forest School', *Children's Geographies,* 10 (1), 49-65, Available: https://doi.org/10.1080/14733285.2011.638176.

Rinaldi, C. (2012) 'The Pedagogy of Listening: The Listening Perspective from Reggio Emilia' in Edwards, C., Gandini, L. and Forman, G., eds., *The Hundred Languages of Children.* 3rd ed. Oxford: England, 233- 247.

Ring, E. and O'Sullivan, L. (2016) *The Importance of Including The Child's Voice in the Transition Process: Signposts from a National Evaluation of Concepts of School Readiness in Ireland*, Available: https://dspace.mic.ul.ie/bitstream/handle/10395/2386/Ring%2c%20E.%20%282016%29%20The%20importance%20of%20including%20the...%28Pre-published%29.pdf?sequence=2&isAllowed=y [Accessed 02 Jan 2022].

Ring, E. and O'Sullivan, L. (2018) 'Dewey: A Panacea for the 'Schoolification' Epidemic', *Education* 3-13, 46(4), 402-410, Available: https://doi.org/10.1080/03004279.2018.1445474.

Ring, E., O' Sullivan, L., Ryan, M. and Burke, P. (2019) *A Melange or a Mosaic of Theories? How Theoretical Perspectives on Children's Learning and Development Can Inform a Responsive Pedagogy in a Redeveloped Primary School Curriculum*, Available:

https://www.ncca.ie/media/3863/seminar_four_er_los_mr_pb_paper.pdf
[Accessed 26 Aug 2019].

Ring, E., O'Sullivan, L. and Harmon, M. (2021) 'The Concept of the Child, Pedagogy, Curriculum, and Accountability in Early Childhood Education for a Post-Covid-19 World' in JuliAnna Á., Rud A., Waks, L., and Ring, E., eds., *The Contemporary Relevance of John Dewey's Theories on Teaching and Learning: Deweyan Perspectives on Standardization, Accountability, and Assessment in Education.* London: Routledge.

Robb, M., Richardson, A., and Mew, V. (2015) *Learning with Nature: A How-to Guide to Inspiring Children Through Outdoor Games and Activities.* Cambridge: UIT Cambridge Ltd.

Robinson, K. (2015) *Creative Schools.* London: Penguin Books.

Roe, J. and Aspinall, P. (2011) 'The Restorative Outcomes of Forest School and Conventional School in Young People with Good and Poor Behaviour', *Urban Forestry & Urban Greening,* 10, 205-212, Available: https://doi.org/10.1016/j.ufug.2011.03.003.

Rodgers, S., Waite, S. and Evans, J. (2017) 'Outdoor Pedagogies in Support of Transition from Foundation Stage to Year 1', in Waite, S. ed. *Children Learning Outside the Classroom, From Birth to Eleven.* 2nd ed. London: Sage, 94- 106.

Rousseau (1762) *Emile, or On Education.* London: J.M. Dent and Sons.

Rousseau, S. and Deschacht, N. (2020) 'Public Awareness of Nature and the Environment During the Covid-19 Crisis', *Environmental and Resource Economics,* 76, 1149-1159, Available: https://doi.org/10.1007/s10640-020-00445-w.

Rozsahegyi, T. (2018) 'Bronfenbrenner's 'Bio-ecological' Model and Its Application to Understanding Children's Development' in Brown, Z. and Ward, S., ed. *Contemporary Issues in Childhood, A Bio-ecological Approach.* Oxon: Routledge, 3-14.

S

Sackville-Ford, M. (2019a) 'What Does 'Long-Term' Mean at Forest School?', in Sackville-Ford, M. and Davenport, H., *Critical Issues in Forest Schools*. London: Sage, 33-45.

Sackville-Ford, M. (2019b) 'Behaviours that Challenge at Forest School', in Sackville-Ford, M. and Davenport, H., *Critical Issues in Forest Schools*. London: Sage, 85-98.

Sage (2020) 'Glossary: Comparative Keyword Analysis, Membership Categorisation Devise (6th ed)', *Sage Research Methods Video: Market Research* [video], Available: https://methods.sagepub.com/video/glossary-comparative-keyword-analysis-membership-categorisation-device-sixt?fromsearch=true [Accessed 17 Jul 2020].

Sahlberg, P. and Doyle, W. (2019) *Let the Children Play. How More Play will Save our Schools and Help Children Thrive.* New York: Oxford University Press.

Saldaña, J. (2016) *The Coding Manual for Qualitative Researchers.* 3rd ed. London: Sage.

Samuelsson, K., Barthel, S., Colding, J., Macassa, G. and Giusti, M. (2020) *Urban Nature as a Source of Resilience during Social Distancing amidst the Coronavirus Pandemic*, Available: https://osf.io/3wx5a [Accessed 10 Apr 2021].

Schön, D. (1983) *The Reflective Practitioner: How Professionals Think in Action.* London: Temple Smith.

Schools of Sanctuary (2022) *What is a School of Sanctuary?,* Available: https://schools-ireland.cityofsanctuary.org [Accessed 07 Jun 2022].

Schunk, D. H. (2012) *Learning Theories, An Educational Perspective.* 6th ed. Boston: Pearson Education.

Scotland, J. (2012) 'Exploring the Philosophical Underpinnings of Research: Relating Ontology and Epistemology to the Methodology and Methods of the Scientific, Interpretive, and Critical Research Paradigms', *English Language Teaching,* 5 (9), 9-16, Available http://doi.org/10.5539/elt.v5n9p9.

Shernoff, D.J., Csikszentmihalyi, M., Schneider, B. and Shernoff, E.S. (2003) 'Student Engagement in High School Classrooms from the Perspective of Flow Theory', *School Psychology Quarterly*, 18 (2), 158- 176, Available: http://doi.org/10.1521/scpq.18.2.158.21860.

Sieber, J.E. and Tolich, M.B. (2013) *Planning Ethically Responsible Research.* 2nd ed. London: Sage.

Silverman, D. (2014) *Interpreting Qualitative Data.* 5th ed. London: Sage.

Simon, M.K. and Goes, J. (2013) *Dissertation and Scholarly Research: Recipes for Success.* Washington: Dissertation Success, LLC.

Sin, C. (2003) 'Interviewing in Place: The Socio-Spatial Construction of Interview Data', *AREA.* 35 (3), 305-312, Available: www.jstor.org/stable/20004324.

Siraj-Blatchford, I. and Sylva, K. (2004) 'Researching Pedagogy in English Pre-Schools', *British Educational Research Journal,* 30 (5), 713-730, Available: https://doi.org/10.1080/0141192042000234665.

Sisk-Hilton, S. and Meier, D. (2017) *Narrative Inquiry in Early Childhood and Elementary School. Learning to Teach, Teaching Well.* London: Routledge.

Skinner, B.F. (1960) *The Process of Education.* Cambridge: Harvard University Press.

Slade, M., Lowery, C., and Bland, K. (2013) 'Evaluating the Impact of Forest Schools: A Collaboration Between a University and a Primary School', *British Journal of Learning Support*, 28 (2), 66- 73, Available: https://doi.org/10.1111/1467-9604.12020.

Spradley, J. (2016) *Participant Observation.* London: Thomson Learning.

Sproule, L. (2017) 'Mental Models of Early Years Practice: Digging Deeper' in Walsh, G., McMillan, D. and McGuinness, C., eds., *Playful Teaching and Learning.* London: Sage, 21- 35.

Stake, R. (1995) *The Art of Case Study Research.* London: Sage.

Steiner, R. (1916) *The Philosophy of Freedom: A Modern Philosophy of Life Developed by Scientific Methods.* London: G.P. Putnam's Sons.

Sugrue, C. (2004) *Curriculum & Ideology: Irish Experiences, International Perspectives.* Dublin: The Liffey Press.

Sugrue, C. (2008) *The Future of Educational Change, International Perspectives.* London: Routledge.

Swann, J. (2012) *Learning, Teaching and Education Research in the 21st Century. An Evolutionary Analysis of the Role of Teachers.* London: Continuum.

Swarbrick, N. Eastwood, G and Tutton, K. (2004) 'Self-Esteem and Successful Interaction as Part of the Forest School Project', *Support for Learning,* 19 (3), 142-146, Available: https://doi.org/10.1111/j.0268-2141.2004.00337.x.

T

Taylor, A. (2013) *Reconfiguring the Natures of Childhood.* Oxon: Routledge.

Terry, G., Hayfield, N., Clarke, V., and Braun, V. (2017) 'Thematic Analysis', in Willig, C. and Stainton Rogers, W. *The Sage Handbook of Qualitative Research in Psychology*, London: Sage.

The Herbal Hub (2020) *Spring and Early Summer Flowers,* Available: *https://theherbalhub.com/members-area/spring-and-early-summer-course/* [Accessed 06 May 2020].

The Heritage Council (2016) *Children and the Outdoors*, Available: https://www.heritagecouncil.ie/content/files/children_%20outdoors_commissioned_report_26mb.pdf [Accessed 10 Oct 2021].

The Teaching Council (2016) *Cosán Framework for Teachers' Learning,* Available:

https://www.teachingcouncil.ie/en/publications/teacher-education/cosan-framework-for-teachers-learning.pdf [Accessed 03 Jan 2022].

The Teaching Council (2016) *Code of Professional Conduct for Teachers.* 2nd ed. Available:

https://www.teachingcouncil.ie/en/publications/fitness-to-teach/code-of-professional-conduct-for-teachers1.pdf [Accessed 03 Jan 2022].

The Teaching Council (2020) *Céim: Standards for Initial Teacher Education.*

https://www.teachingcouncil.ie/en/news-events/latest-news/ceim-standards-for-initial-teacher-education.pdf [Accessed 03 Jan 2022].

The Teaching Council (2021) *Providers of Initial Teacher Education,* Available: https://www.teachingcouncil.ie/en/Teacher-Education/Initial-Teacher-Education/Providers-of-Initial-Teacher-Education/ [Accessed 05 Jan 2021].

Thomas, G. (2013) *How to do your Research Project.* 2nd ed. London: Sage.

Thomas, D.R. and Hodges, I. (2010) *Designing and Managing your Research Project: Core Skills for Social and Health Research.* London: Sage.

Thomas, L., Warren, E. and DeVries, E. (2011) 'Play-Based Learning and Intentional Teaching in Early Childhood Contexts', *Australasian Journal of Early Childhood*, 36 (4), Available: https://doi.org/10.1177/183693911103600410.

Tudge, J.R.H. (2016) 'Implicit Versus Explicit Ways of Using Bronfenbrenner's Bioecological Theory', *Human Development,* 59, 195-199, Available: https://doi.org/10.1159/000449453.

Tudge, J.R.H., Mokrova, I., Hatfield, B.E. and Karnik, R.B. (2009) 'Uses and Misuses of Bronfenbrenner's Bioecological Theory of Human Development' *Journal of Family Theory and Review,*1, 198-210, Available: https://doi.org/10.1111/j.1756-2589.2009.00026.x.

TUSLA (2021) *Children First E-Learning Programme,* Available: https://www.tusla.ie/children-first/children-first-e-learning-programme/ [Accessed 30 Jan 2021].

Turtle, C., Convery, I., and Convery, K. (2015) 'Forest Schools and Environmental Attitudes: A Case Study of Children aged 8 - 11 years', *Cogent Education*, 2 (1), Available: https://doi.org/10.1080/2331186X.2015.1100103.

U

United Nations (2010) *The United Nations Convention on the Rights of the Child*,
Available: https://www.childrensrights.ie/sites/default/files/UNCRCEnglish.pdf
[Accessed 11 Jul 2019].

V

Vecchi, V. (2010) *Art and Creativity in Reggio Emilia*. London: Routledge.

Vygotsky, L. (1926) *Educational Psychology.* Florida: St Lucie Press.

Vygotsky, L. (1929) 'The Problem of the Cultural Development of the Child II',
Journal of Genetic Psychology, 36, 415-32, Available:
https://doi.org/10.1080/08856559.1929.10532201.

W

Waite, S. (2011) 'Teaching and Learning Outside the Classroom, Personal Values,
Alternative Pedagogies and Standards', *Education,* 3 (13), 65-82, Available:
https://doi.org/10.1080/03004270903206141.

Waite, S., Bolling, M. and Bentsen, P. (2015) 'Comparing Apples and Pears a
Conceptual Framework for Understanding Forms of Outdoor Learning through
Comparison of English Forest Schools and Danish Udeskole', *Environmental
Education Research,* 22 (6), 868 – 892, Available:
https://doi.org/10.1080/13504622.2015.1075193.

Waite, S. and Goodenough, A. (2018) 'What is Different about Forest School?
Creating a Space for an Alternative Pedagogy in England', *Journal of Outdoor and
Environmental Education,* 21(1), 25 – 44, Available:
http://dx.doi.org/10.1007/s42322-017-0005-2.

Waite, S. and Pratt, N. (2017) 'Theoretical Perspectives on Learning Outside the
Classroom- Relationships between Learning and Place' in Waite, S., ed., *Children
Learning Outside the Classroom, From Birth to Eleven.* 2nd ed. London: Sage, 7- 22.

Waite, S., Rutter, O. and Fowle, A. (2017) 'Methods of Assessment and Evaluation
for Learning Outside the Classroom' in Waite, S., ed., *Children Learning Outside the
Classroom, From Birth to Eleven.* 2nd ed. London: Sage, 23- 37.

Walker, T.D. (2017) *Teach Like Finland, 33 Simple Strategies for Joyful Classrooms.* New York: W.W. Morton and Company.

Walliman, N. (2018) *Research Methods: The Basics.* 2nd ed. London: Routledge.

Walsh, G. (2017) 'Why Playful Teaching and Learning?' in Walsh, G., McMillan, D. and McGuinness, C., eds., *Playful Teaching and Learning.* London: Sage, 7-21.

Walsh, T. (2012) *Primary Education in Ireland, 1897- 1990: Curriculum and Context.* Vol. 12. Oxford: Peter Lang.

Walsh, T. (2022) *The Draft Primary Curriculum Framework, A Framework of Opportunities*, Available: https://intouch.into.ie/html5/reader/production/default.aspx?pubname=&pubid=b5e9d7cd-6832-4cbd-8c50-96ba8cc9ab12 [Accessed 20 Feb 2022].

Walsh, G., Sproule, L., McGuinness, C.,Trew, K., Rafferty, H. and Sheehy, N. (2006) 'An Appropriate Curriculum for 4-5-Year-Old Children in Northern Ireland: Comparing Play-Based and Formal Approaches', *Early Years: An International Journal of Research and Development*, 26 (2), 201–221, Available: https://doi.org/10.1080/09575140600760003.

Warden, C. (2018) *Nature Pedagogy: A Common Thread Connecting Nature-based Settings Worldwide.* Natural Start Alliance, Available: https://naturalstart.org/feature-stories/nature-pedagogy-common-thread-connecting-nature-based-settings-worldwide [Accessed 03 Apr 2022].

Wattchow, B. and Brown, M. (2011) *A Pedagogy of Place. Outdoor education for a Changing World*. Clayton: Monash University.

Weber, M. (1946) *Essays in Sociology.* New York: Oxford University Press.

Weber, M. (1949) *The Methodology of the Social Sciences.* Glencoe: Free Press.

Webster, L. and Mertova, P. (2007) *Using Narrative Inquiry as a Research Method*. Oxon: Routledge.

Weisberg, D. S., Hirsh-Pasek, K., and Golinkoff, R. M. (2013) 'Guided Play: Where Curricular Goals Meet a Playful Pedagogy', *Mind, Brain, and Education*, 7, 104-112, Available: https://doi.org/10.1111/mbe.12015.

Westman, L. (2018) *Student-Driven Differentiation, 8 steps to Harmonize Learning in the Classroom.* Thousand Oaks: Sage.

Westwood, P. (2002) *Commonsense Methods for Children with Special Educational Needs.* 4th ed. Routledge: Oxon.

Westwood, P. (2015) *Commonsense Methods for Children with Special Educational Needs.* 7th ed. Routledge: Oxon.

Whitebread, D. (2010) 'Play, Metacognition and Self-Regulation', in Broadhead, P., Howard, J. and Wood, E., eds., *Play and Learning in the Early Years, From Research to Practice.* London, Sage, 177- 187.

Whitton, N. (2018) 'Playful Learning: Tools, Techniques, and Tactics', *Research in Learning Technology*, 26, Available: https://doi.org/10.25304/rlt.v26.2035.

Wiedel-Lubinski, M. and Madigan, K. (2020) *Nature Play Workshops for Families.* Beverley: Quarry Books.

Williams, F. (2017) *The Nature Fix.* New York: W.W. Norton and Company Inc.

Willig, C. (2013) *Introducing Qualitative Research in Psychology.* Berkshire: Open University Press.

Wilson, R. (2007) *Nature and Young Children, Encouraging Creative Play and Learning in Natural Environments.* London: Routledge.

Wilson, E.O. (1984) *Biophilia.* London: Harvard University Press.

Wilson, J. (1977) *Philosophy and Practical Education.* Routledge and Kegan Paul: Oxon.

Wood, E. and Attfield, J. (1996) *Play, Learning and the Early Childhood Curriculum.* London: Paul Chapman Publishing.

Wood, E. and Attfield, J. (2005) *Play, Learning and the Early Childhood Curriculum.* 2nd ed. London: Sage.

Wood, E.A. (2013) 'Free Choice and Free Play in Early Childhood Education: Troubling the Discourse', *International Journal of Early Years Education,* 22 (1), 4 – 18, Available: https://doi.org/10.1080/09669760.2013.830562.

Woodwell, D. (2014) *Research Foundations: How Do We Know What We Know?* London: Sage.

Y

Yin, R. K. (2018) *Case Study Research, Design and Methods.* 6th ed. London: Sage.

Young, J., Haas, E. and McGown, E. (2016) *Coyote's Guide to Connecting with Nature.* 2nd ed. Santa Cruz: Owlink Media Corporation.

Z

Zimmerman, B.J. (1990) 'Self-Regulated Learning and Academic Achievement: An Overview', *Educational Psychologist,* 25 (1), 3 – 17, Available: https://doi.org/10.1207/s15326985ep2501_2.

Appendix A

A.1 The Conceptual Framework and Phases of the Research Process Summary Table

The Conceptual Framework and Phases of the Research Process Summary Table (Adapted from Ravitch and Riggan 2017)

Phase of Research Process	Conceptualisation	Research questions and design	Data collection and field work	Data analysis	Presenting and explaining findings
Central Themes or Questions	How do I figure out what I want to study? How do I craft my topic and methods?	How does my conceptual framework inform big decisions about what kind of data to collect and how to analyse it?	How does my conceptual framework inform decisions about sample/participant selection, modes of inquiry, and data collection strategy?	How does my conceptual framework help me to develop or select analytic tools that align with my data and engage my research questions?	How do I use research findings to both refine and extend the argument advanced by my conceptual framework?
Connection to Research Project	*The Forest Floor* Literature outlines children's disconnection with the natural world. There is a need to deepen the research-based understanding of Forest School. I want to know if Forest School is suitable to deliver the Irish Primary School Curriculum.	*Seed Propagation Stratification* Interpretive methods Constructivist/ critical constructivist paradigm Qualitative methodological approach	*Gathering the Seeds* Case study research method Semi-structured interviews (journeying) Inclusion of pedagogical documentation Semi-structured observations Reflexive researcher memo	Qualitative data-analysis Thematic data-analysis	*Planting the Seed Nurturing the Seedlings* Findings discussed within Bronfenbrenner and Morris' (2006) Bio-ecological Process-Person-Context-Time Model

Learning and Teaching Outdoors

Forest School

Vision, Aims, Principles

The Irish Primary School Curriculum

Subjects, Content Objectives

Educational Theory

Policy and History of the Irish Primary School Curriculum

Rights of the Child (UN 2010)

Curaclam na Bunscoile (1971)

The Quinlan Report

Department of Education
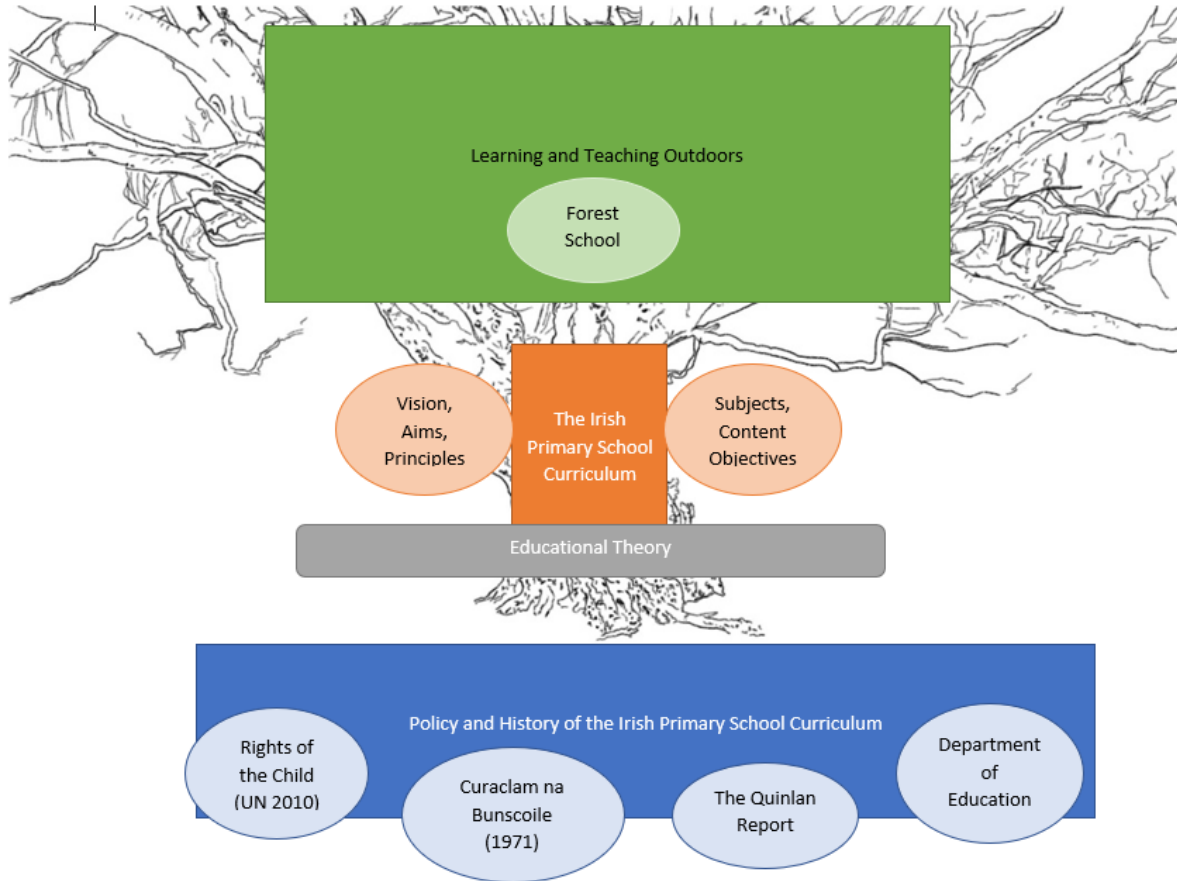
Appendix C
C.1 Sample of Completed Observation Running Records
Senior Infants

12th February 2019

2	Principles of PSC	Observation
2.1	Active Learning is observed *the child is an active agent in his or her learning (PSC)*	The children watch the FSL light the fire and sing the fire lighting song, the FSL encourages them saying "keep singing as the fire loves it" The 6 children who go on the adventure with the FSL all attempt spark making (5 succeed)
2.2	Talk and Discussion is facilitated *language is central in the learning process (PSC)*	Discussion of reasons to make fire- building a "raft" to put the fire on. Vernon notes "like a boat" (AOO) Olive asks FSL if she lives in the forest. The FSL uses a talking object during the closing circle during the discussion- child provides their name and something they wish to say about FS.
2.3	Use of the Environment	The children gather sticks from the forest to make the fire. The children are jumping in the mud while they listen to the FSL while she demonstrates lighting the fire. The children put their hand in the air to feel which way the wind is blowing while the fire is being lit.

9th April 2019

2.4	Lower and Higher order questioning is used *higher-order thinking and problem-solving skills should be developed (PSC)*	Vernon "Bluebell, you choose to eat God's insects?" FSL, "Yeah", "What do you eat?" Vernon: "normal food". Viola "teacher, what is that called?" FSL "that's pancake batter", Viola: "what's in it?" FSL "there's flour and water…" She gets interrupted by another child at this point. Wisteria "is that a tent?" Sierra "are you making a healthy pancake?"
2.5	Opportunities to reflect and self-assess are provided *social and emotional dimensions are important factors in learning (PSC)* *skills that facilitate the transfer of learning should be fostered (PSC)*	7 children lean on a fallen down tree and the branch breaks. Marina is outside the boundaries, Terra and Sierra remind her to come back. (AOA) Heath brings a piece of holly to the FSL, "teacher I found nettles", the FSL tells him that it is not nettles but to try to find out what it is, he asks me (AOA). (need to tell children the answers sometimes?) Viola is upset when the FSL puts the nettles in the pan as she is afraid that the FSL is hurting herself. The FSL explains that we are cooking them to remove the sting. Spruce tries to put all the nettle leaves into the pan. Viola and Ivy try the nettle pancakes.

2nd Class

18th September 2018

2	Teaching Methodologies	Observation
2.1	Appropriate teaching methodologies and strategies incorporated | 1 | 2 | 3 | 4 | 5 | **Underline where observed:** Talk and Discussion Collaborative Learning Active Learning Skills Through Content Using Local Environment Problem Solving Use of ICT	Talk and Discussion: on way into the forest, the FSL asked "what creatures do you think live in the forest?" some children replied "snakes" "lizards" (AOO) The FSL noted the animals that live in the Forest and explained that we must be mindful of them when sharing the space with them. Active Learning: creating clay faces on trees, some children were involved, others stayed at the boundary, others choosing to jump off rocks or climb trees instead. Rowan had his clay, but other boys called him to play instead. Two boys with wellies wanted to jump in puddles. Boys finding spiders.

2nd October 2018

1.	Engagement	Observation
1.1	Children engage in the learning	All children were engaged in the warm up game. Children were either whittling, exploring chalk pastels, climbing the tree, in the stream, in the hammock. Some children decided to play Hide and Seek (not prescribed activity- own choice).
1.2	Teachers engage in the teaching during Forest School	The FSL provided the teachers with roles during the warm up game to involve them. SNA (Darren) discussing leaves falling from the trees with children- discussion about Autumn and how this is called 'Fall' in America because the leaves are falling from the trees. The CT tried out the hammock during this FS session.

2	Principles of PSC	Observation
2.1	Active Learning is observed *the child is an active agent in his or her learning (PSC)*	The class played a game called "Fire in the Forest" to warm up. Children who are named native animals perish when they are caught by the forest fire, native trees turn to fire and can chase others. The FSL noted that the children had asked to make spears each week, today they learned how to whittle and make their own spear. They had to find a suitable stick to make a spear.
2.2	Talk and Discussion is facilitated *language is central in the learning process (PSC)*	The children were asked to choose the native trees that could be included in the game "Fire in the Forest". One child suggested "Palm Tree" (AOO). There was a discussion of what a native Irish tree is; one that grows in Ireland naturally. A group of children decided to play Hide and Seek, the game began to change to Hide and Seek Tag. Lark was unaware that it had changed to a game of tag and was caught, he said that it wasn't Hide and Seek Tag and left the game to rock the child in the hammock.

4th Class

5th February 2019

2.5	Opportunities to reflect and self-assess are provided *social and emotional dimensions are important factors in learning (PSC)* *skills that facilitate the transfer of learning should be fostered (PSC)* *assessment is an integral part of teaching and learning (PSC)*	The children decide what their animal call will be- they vote between the cuckoo, crow and Wolf. Only the CT votes for the crow, all children vote for the wolf. The children are asked what they want to learn during their time at FS; Sno: explore the woods, Jasmine: n/a, Daisy: n/a, Sandy: n/a, Marjoram: climb trees, Sage: not auditable- CT repeated to FSL, Rosemary: n/a, Flo: make stuff out of trees- like nature craft, Magnolia: n/a, Birk (gave himself nature name of "nothing Birk"): climb trees, River: explore more, Aspen: n.a., Robin: nature (AOO) *n/a- did not contribute*
2.6	An Inclusive learning environment is evident *the range of individual difference should be taken*	Half way through the session, the CT asked me if she needed to let me know any other needs apart from physical needs. She explained that 3 children have diagnosis of ASD, and 2 are waiting assessment. She had not felt this was relevant information to share with the FSL as only thought physical needs would impact on the FS session.

19th March 2019

2.3	Collaborative Learning is facilitated *collaborative learning should feature in the learning process (PSC)* *social and emotional dimensions are important factors in learning (PSC)*	The children needed to be aware of one another during the blind fold trail so that they didn't bump into one another. Sparrow takes his hand off the rope and has to start again- the children need to listen to the guiding FSL CT voices to guide them- child/adult collaboration Collaborations between adults- when guiding the children, had to use voice and hand over to next adult William (SET) and Magnolia, Marjoram, Robin and Sage were carrying the branches together to build the fort. Aspen is assessing his way across the stream as he carries a branch to create the shelter. Cedar puts his hand out to help Aspen across. A line of 4 children pass the sticks across the stream to build the shelter.

338

5th Class

11th September 2018

1.	Perceptions of Forest School	Observation
1.1	Children seem happy in the learning environment 1 | 2 | 3 | **4** | 5	Children seemed happy to follow directions and seemed to engage in lesson. Some were disappointed that they did not get to go to the forest this week.
1.2	Teachers seems to engage in teaching and learning during Forest School session 1 | **2** | 3 | 4 | 5	SET stayed on outside of circle and walked around the edge. She stayed standing and did not sit down to join the circle. The CT and SNA came out later to the session. The FSL asked him to facilitate the Palm Drill session, which he did, but was not as engaged in it as the previous teacher.

16th October 2018

3.	Curriculum	Observation
3.1	Curricular Subjects Observed- add to strand/strand unit table after *learning is most effective when it is integrated (PSC)*	PE: • Climbing the tree/ jumping out of the tree • "10 second rule" game • Creating swing • Building shelter SPHE: • Rope and knife safety Literacy: • Storytelling game- point and grab

27th August 2018

Barriers that are evident already

1. Insurance

The Heritage in Schools uses the school's insurance. The Forest School Leader's insurance covers bush skills element of sessions, it is up to the leader to pay for this.

2. Funding/Costs

Bus cover is required to go to the woods in many cases. Without the Heritage in Schools funding, it would be up to the school to cover the Forest School Leader's full fees also.

3. Keeping Ethos

The insurance, funding and permission all affect the keeping of the Forest School ethos of it being a long-term occurrence and the children are immersed in the woodland.

4. Permission to use the land

The Forest School Leader had to seek permission from the local council to light fires on the land.

We are fortunate that all individuals involved are very supportive, it would be very difficult to run the sessions if this was not the case.

13th November 2018

Walking Interviews- journeying

I felt that the younger children were distracted as we walked around during the interviews, rather than stimulated.

While children were asked permission, I questioned if talking to me seemed like a punishment to some children- like Alder who wanted to "play" instead.

I had planned to interview children in groups of five, it did not work out as the children wanted to talk to me in their organic friendship groups. Oleander and Rocky asked to talk to me as a pair. Holly wanted to talk to me alone.

Transcribing Foxglove's Interview

He says that bringing children outdoors is for self-discovery learning, does the structure of the primary school classroom influence a certain kind of teaching? The outdoors is a different space and holds a different atmosphere. Can we consider this in

- Flexible seating
- Desk organisation
- Classroom environment

Do we influence this subconsciously?

He mentions collaboration- what collaboration methods between teachers are recommended? What have other FS studies said about this?

He did not realise that Cliff had made a skeleton, this shows the challenge of assessment in this type of learning space.

He felt that there was no literacy, but that they get that in school- is this view a problem? Should they be getting more?

19th March 2019

Weather

The weather was much milder today (+10C), I noted a big change in my own energy and attitude towards being outdoors.

While it was still damp and misty, it was not as challenging as the weather when it is cold, damp and wet. I noticed plants that I did not see a few weeks ago- the Forest School Leader laughed and said I could not see them for the weather.

The weeks in February were very challenging due to the cold and wet weather. The fires were difficult to light. It took a lot more energy and time to set up the tarps and then they were wet when we took them down. Water poured from the tarps into the bags and on us. Our clothes were damp and wet.

The Forest School Leader noted that many practising Forest School Leaders are not bringing as much equipment into the forests as they cannot do this on their own. They are not attempting to put up shelters or to light fires.

Thoughts…

There is a need for nature specialists to educate teachers, rather than sessions with children (or do both).

We need to view our own heritage, rather than an on-trend Scandinavian one:

- Farming culture
- Forestry
- Nature
- Native
- Wildlife

Nature education is more open, it is never ending and requires teachers to be professional, life-long learners rather than teaching from a scheme.

Appendix D
D.1 Sample Completed Curricular Subject Objectives Grids

Senior Infants

Oral Language	Element	Developing communicative relationships through language (Communicating)	Understanding the content and structure of language (Understanding)	Exploring and using language (Exploring and Using)
Learning Outcome				
Engagement, listening and attention		05.02.19 listening to each other's nature names and copying their nature move 19.03.19 following directions during blindfold trail 26.03.19/ 02.04.19 game "You're only safe if…"		
Social conventions and awareness of others		05.02.19 use of 'deer ears' and 'owl eyes' to focus awareness of others 12.02.19 use of talking object during closing circle 09.04.19 small group of children eat their lunch together		
Acquisition and use of oral vocabulary			05.02.19 "boundaries"/ "gorse tree" 02.04.19 "tinder", "birch bark" 02.04.19 "pink" boundary flag and "moss" during game	

Aistear Framework	Well-being	Identity and belonging	Communicating	Exploring and thinking
Children will be strong psychologically and socially Children will be as healthy and fit as they can be Children will be creative and spiritual Children will have positive outlooks on learning and on life	05.02.19 "R's" of respect 12.02.19 tree climbing safety 12.02.19 fire safety 26.03.19 children use hammock 09.04.19 nettles as food source/pancakes			
Children will have strong self-identities and feel respected and affirmed Sense of group identity where links to their family		05.02.19 nature names 26.03.19 thanking forest in closing circle 02.04.19 putting sticks in fire		

Second Class

Science	Strand	Living things	Energy and forces	Materials	Environmental awareness and care
Strand Unit					
Plants and animals		11.09.18 labelling "wasp" 11.09.18 discovering mushrooms 11.09.18 labelling earthworm and where it should be placed 03.10.18 exploration of leaves in chalk pastel prints			
Heat			03.10.18 impact of forest fires on animals and trees in game "Fire in the Forest"		
Properties and characteristics of materials				11.09.18 drilling holes in wooden discs with palm drills	
Caring for my locality					11.09.18 respect for environment and living things (earthworm) as part of Forest School rules

Fourth Class

Visual Arts	Strand	Drawing	Paint and colour	Print	Clay	Construction	Fabric and Fibre
Developing form in clay					26.03.19 creating tree faces in clay 30.04.19 using clay		
Looking and responding					26.03.19 responding to each other's tree faces		
Making constructions						12.02.19 constructing mini-beast mansions	
Creating in fabric and fibre							26.03.19/ 30.04.19 whittling 30.04.19 cutting wooden cookies

Fifth Class

Physical Education	Strand	Athletics	Dance	Gymnastics	Games	Outdoor and adventure activities	Aquatics
Strand Unit							
Running		18.09.18/ 25.09.18/ 02.10.18/ 09.10.18 running during chasing games in open grass area					
Jumping		18.09.18/25.09.18/ 02.10.18/ 16.10.18 jumping out of trees 09.10.18 progression in jumping higher out of tree					
Throwing		25.09.18/ 16.10.18 throwing rope over branches					
Movement				11.09.18 balancing on tree stumps 18.09.18/ 25.09.18/ 02.10.18/ 09.10.18 swinging from branches			
Creating and playing games					18.09.18 Chasing game: "Foxes' Tails"		

Forest School- Previous Knowledge	
1. Were you familiar with the Forest School approach before the sessions? If so, what did you know?	
2. What did you know about outdoor education?	
3. Had you received any training in outdoor education?	
4. What approaches have you used to teach outdoors?	
Forest School- Perceptions	
1. What did you think of the Forest School sessions?	*I will display a variety of photographs of the children during Forest School activities and the objects they created during different Forest School sessions to provide a "Stimulated Recall".*
2. Where there any challenges of implementing Forest School in the Primary School? If so- what were they?	
3. Do you see any benefits of implementing Forest School in the Primary School? If so- what are they?	

4. What was your favourite memory of the sessions?	
5. What recommendations would you make for the implementation of sessions in a Primary school?	
6. Was there anything that surprised you about the Forest School sessions?	
Irish Primary School Curriculum- Principles, Vision, Aims, Subjects and Assessment	
1. Were there any teaching approaches observed during the Forest School sessions that you think would be useful in the classroom?	*I will link these to the Principles after the interview*
2. The Vision of the Irish Primary School Curriculum is focused <u>on nurturing the needs of the child</u> so that they can be a <u>member of an ever-changing Irish society</u>. The Primary School Curriculum envisions this learning through the <u>teaching in a stimulating environment</u>, through the use of <u>social development</u> and <u>active involvement</u> to develop <u>the child's self-confidence.</u> Do you think this vision was achieved in the Forest School sessions?	

sessions? How do you think this vision may link with Forest School?
 	
3. The three general aims of the Primary School Curriculum are:
 	
    i.   *to enable the child to live a full life as a child and to realise his or her potential as a unique individual*
 	
    ii.   *to enable the child to develop as a social being through living and cooperating with others and so contribute to the good of society*
 	
    and
    iii.   *to prepare the child for further education and lifelong learning*
 	
    Do you think these general aims can be achieved in Forest School?
 	
    Did you witness this during the Forest School sessions?
 	
4. What subjects of the Irish Primary School Curriculum were evident during the Forest School sessions?
 	
    Are there opportunities to incorporate the teaching of any additional subjects that were not observed in the sessions through Forest School?	

| 5. Did you observe any assessment strategies during the Forest School sessions?
 If so; what?
 If not; what could be incorporated? | |

28ᵗʰ May 2019

R: Researcher

H: Heather

1. ***R: Brilliant, that's great to her, thanks. So what did you know about outdoor education from it that experience and your own teaching experience?***

2. H: So what did I know, I guess I could see the value in it, and how my children really loved it, and anytime you take learning outside I think the kids really, really benefit from it. In the summer months when we can go outside for whether it's science or whatever it is outdoors, they love it. And I guess I feel like a lot of the children in our school are spending a massive amount of time indoors and I think anything that brings them outside would be a positive thing, and I guess the freeness of what they are learning as well, that it's kind of led by them, and it's not a necessarily a sit and listen activity, that it's lead by what they discover, and what they feel like doing on a particular day.

3. ***R: Okay, brilliant, thank you. Had you received any other training in terms of your own teacher training in outdoor education?***

4. H: No, none. But, sorry, I'm a scout leader, but that's through my boys, that they wanted to become a member of scouts and they needed leaders, so I done scout training and I guess a lot, it's not the same, but a lot of the principles as in valuing the outdoors and the benefits for children of outdoor learning. There's definitely parallels but it's not the same.

5. ***R: Okay, very good. Had you used any of these approaches teaching outdoors or with your class? What approaches would you use to teach outdoors with your class?***

6. H: So, I guess it depends on the class level, at loads of different points since I've been in this school anyways. The school garden has been a big thing. At one stage we had a dedicated school gardener that came in and she would bring us all out and show us

what to do. We don't have a school gardener anymore so it's left up to individual teachers to bring the kids out, but we've a lovely willow dome and a lot of the time in the summer or the spring we go out and we do story time out there…

<div align="center">Senior Infant CT; Dandelion</div>

<div align="right">*28th May 2019*</div>

R: Researcher

D: Dandelion

1. ***R: So, this is called simulated recall, and the idea is that when I ask you what you think about the sessions, these might jog your memory. So, I tried to use your photos from your sessions as much as I could. So, these are just some of the photos. What did you think of the Forest School sessions?***

2. D: Absolutely loved it and it was such a different approach, and such a different style of teaching and learning that I have, or the kids have been exposed too. And just something totally brand new. I really enjoyed it and I think the kids really enjoyed it too. Just that opportunity to be outdoors and to be connecting with nature which is something a lot of our children especially, don't get the opportunity to do. Like, the amount of children, when we started climbing the trees on the first day, actually said "I never climbed a tree". That really shocked me because as a child I was always out climbing trees or out in the fields or stuff like that, but they just never had and a lot of them were very hesitant to climb but at the end they were really loving it. So, just the opportunity it gave the children was immense really.

3. ***R: Okay, thank you. Were there any challenges of implementing Forest School in the primary school system and if so, what were they?***

4. D: Do you mean in this situation?

5. ***R: Yeah.***

6. D: Not really, because it was really well set up. I suppose if you were to set it up by yourself there would be difficulty with like organising the bus and getting someone

qualified in to teach the class and to have all the skills and to have all the tools to do it but, Bluebell was fantastic so, there was never a difficulty in that regard. I suppose from a class management point of view, it was more so containing the children because they're not used to having that amount of freedom in a classroom setting. So, it was just to make sure that the boundaries were set out for them. After a couple of weeks, they kind of understood what was expected of them and they really, really enjoyed it.

7. **R: Okay thank you. What benefits do you see of implementing the Forest School in the primary school system.**

8. D: Most definitely self-esteem and confidence. You could just see the children really grow over the few weeks and I was only there every second week but, even in those five or six sessions that I was with them, that climbing, flying up the trees, getting really confident, even in the water, there was that day they were in the stream, splashing about and they didn't have any hesitation to do it. Whereas if that was the week one, they definitely would have hung back but they were just so much more confident in themselves and in their abilities to do things, like even going on the hammock and building forts. I remember the last week I was there they completely decided to undertake to building a fort because they had done it before but, they were really very methodical about it. They worked as a team, and something that they would have found more difficult to do was to work as a team and teamwork, so it definitely gave a lot of opportunities for that.

Second Class CT; Poppy

27th November 2018

P: Poppy

R: Researcher

1. **R: Was there any teaching approaches that you observed at Forest School that you would use again in the classroom?**

2. P: Hmm, there was a lot of, I suppose you would use, it was interesting to see that like Bluebell had obviously done this a lot with other schools or whatever. Erm but the letting children take the lead, asking them "what would you do?" or different scenarios. Erm, no I would say all the approaches Bluebell used were what we kinda used, we use anyways. I didn't really see anything new that I can think of, I probably did but I can't off the top of my head think of.

3. *R: Thank you. Erm, ok, and erm, what subjects do you think, the subjects of the Irish Primary School Curriculum, were evident during the sessions? Like you know in your planning,*

4. P: Yeah, so I would have slotted a lot of the stuff under eh like say our Outdoor and Adventure in the PE, we would have done our art, there would have been the science, the trees, all of that. Eh, like say there with Hallowe'en, the history of Hallowe'en, we talked a bit about that. There was, you know, we were doing, even when we were doing those little books we were writing so our literacy is there. There was a bit of Gaeilge every so often thrown in. There was a lot of stuff, like you could potentially hit all your curricular areas. There was definitely a lot, you know I've slotted them in in different ways, erm and I would have yeah, like, it wasn't, like even the SPHE with the fire safety, that's covered. There's lot of stuff covered already.

5. *R: Do you think there's a potential to teach additional subjects in this way as well?*

6. P: Oh God yeah, because like say even now, before we did this, I wouldn't have even thought Art would have come into it really, because you are kinda thinking art is an indoor activity and your paper and your paint or your plate, it's done indoors. And then to be outdoors, like incorporating it with science, minibeasts and all the different things that we done. So like yeah, if you could bring art for example or whatever it is, I think you could. I haven't thought about it, you know in other areas, but like your SPHE- all of those can be brought in, yeah I would see that you could like, you could do any of them. I think it's just because it's outdoors, it doesn't actually make a difference. It's just an outdoor classroom, so yeah.

R: Researcher

S: Snowdrop

1. *R: Were you familiar with the Forest School approach before these sessions in the school?*

2. S: The approach, I was familiar with the Forest Schools and I had watched videos online and I had gone to a meeting as well. So, I went to a meeting in XXXXXXX library, maybe a year and a half or two years ago, and I went to that because I would have been interested in doing the training. And then I would have watched videos that would gave been on the Forest Schools website as well.

3. *R: Okay, and what did you know about it then?*

4. S: I knew that kids went to the woods and that they could learn in the woods and have a little classroom in the woods and that you could teach lessons while being in the woods, and that there are skills thought as well ,while out there. There was a teacher there who's doing it through XXXXXXX School, so, she was actually doing the talk in XXXXXXX library when I went. I also checked into the courses, so I knew they were expensive, the courses as well. I had seen a bit on Nationwide as well. So, I had actually considered it for our school before, in the past.

5. *R: Okay, great. What did you know about outdoor education beforehand? You mentioned a lot there about Forest School but had you any experience in outdoor education, without the Forest School title?*

6. S: Not in a very structured way, no. I know the aquarium in XXXXXXX have a classroom attached and they do courses in that as well so, that there is, and you could also do seaside education. I actually tried to sign up for a summer course but it was all booked out, so it's obviously very popular. They do that through the marine institute so, I would have brought kids back there in the past but, I would like to have something more structured again, something we could do in the school. We know in geography

354

you're meant to do as many field trips as you can, and we would be allowed and we would be encouraged to take the kids out as often as we can in this school.

7. **R: You mentioned you were interested in signing up, but had you received any training in outdoor education?**

8. S: No, god no.

9. **R: You mentioned the geography field trips there. What approaches had you used to teach outdoors?**

10. S: Approaches, we would try to structure something possibly between, if there were two forth class teachers going out to look at the environment we're living in, to bring the kids down the canals and again, to explore the seashore. Again we're limited often by the cost of the bus, we would love to bring them up to the bog. Most of the kids have never been on the bog, even though it's as close to us as the seaside. And into the woods, we go into the university grounds in September, to look at the trees there and to collect leaves and conquers or whatever.

Fifth Class CT; Foxglove

27th November 2018

R: Researcher

F: Foxglove

1. **R: Ok, brilliant, thank you. Erm, and like you said, you have brought them down to the beach and you have brought them on trips before, were there any approaches you used for teaching outdoors, did you change, like in comparison to indoors.**

2. F: Erm, yeah, yeah, because there is, I think, the whole point when you are bringing kids outdoors, and you're trying to expose them to it, I think it needs to be guided but more importantly it needs to be self-discovery so they, I, the and that's what I got I suppose from the Forest School, they were sort of, you give them a directive and then let them do it, let them go for it and then guide them if they need to, but then the whole thing really needs to be them finding what they are looking for. Erm,

and that would have been the case anytime we have gone down to the beach; try and find these things, now go and do it, so 90% of the time they are just working with themselves without an adult's help.

3. **R: yeah, erm and what, so you've mentioned a lot of the benefits there already and erm, but if you had to list the benefits that you saw erm in terms of the Primary School and what we are teaching in the Primary School, what benefits did you see there?**

4. F: Erm, well I suppose, you know, they're learning constantly, so they learned types of trees, parts of nature, erm, how you know, things that aren't animate can communicate with each other. Every week there was something that I was even, you know, eh learning or pulling in. erm, they eh, now there was, in terms of literacy and or numeracy, you're not going to get much in there, but erm I mean, the overall sort of mental well-being of the kids when I see them coming back glowing from something like that. Erm, well you can relate it to the curriculum, but but that's the thing like, they've been out somewhere where there's no plug sockets. And really they are self-guiding themselves through eh an experience that they wouldn't ordinarily be in, you can't but that. But yeah, they were constantly learning. Bluebell in fairness has a wealth of knowledge there you know so,

5. **R: and what would be your favourite memory of all the Forest School sessions, what is your favourite…**

6. F: eh, I suppose predictably, the fire. And, I was a, I still am a, I suppose in some regards, a tree climber. But you know, even and I made reference to it last week, when Fleur said "I want to thank the tree for giving me the courage to climb it", so climbing trees is something remarkably that a lot of kids aren't doing anymore. Erm and there is something about it, it's not the same as a climbing frame. Erm and kids and I actually really love that idea of thanking the tree and putting your hand on the tree and saying something, I know a lot of kids don't buy into it, erm, but most do. And they would over time, and depending, like if everyone bought into it when we were delivering it, it yeah, it's something that yeah, just awakens something in kids.

And they're all, like when they get to a certain point, they become still, sit at the top and hold on to a branch, it's like "Awh", I've achieved something here.

"Hi,

As you probably know, I have been watching you learn in Forest School each week. Today I would like to talk to you about Forest School.

I would like to hear what you liked about Forest Schools and if there is anything you might change about your time in the forest.

I am doing this listening because I am doing 'research'. 'Research' is where you find out lots of things and then write them in a book. I will be writing what you say to me in a book. Your name or school will not be written in the book, only what you say.

I will talk to your teacher at another time and ask (teacher's name) what they thought was good and what they might like to use in your classroom. I will show him/her the photographs of you learning during Forest School that you saw me taking, so they can talk to me about what they saw too. I will not keep these photographs after.

You do not have to talk with me if you do not want to. If you think that you'd like to talk to me about Forest schools, and if you change your mind while we are talking, and you want to stop answering questions, all you have to do is say "I'd like to stop". You can leave the group at any time and join the rest of the class. You will be able to see your teacher and friends in your class and can walk back over to them.

I am going to be recording what you say so that I can listen carefully to it again later as what you say is very important. I have a recorder here to do this. When I press this button with the red dot in the middle, the recorder is on and when I press it again it turns off. We will see if the recorder is working before, we begin. When I press the button, we can all say "hello" together and I will play it back to you so that you can check if it is working (I will ask a child to take a turn doing this also).

Before we start, I would like to be sure that all of you are happy to start so I brought along a sheet for each of you to sign for me. I will read the writing and you can put a mark on the green thumbs up (point to) if you would like to talk to me and put a mark on the red thumbs down (point to) if you would prefer not to talk with me about Forest Schools today. Remember you do not have to talk to me if you do not want to, so it is alright to put a mark on the red hand."

Child's Name: _____

I am happy to talk about Forest School		
You can write what I say in your book		
I can leave the group at any time		

Forest School- Previous Knowledge	Link to PSC Principle
1. Had you heard of Forest School before? 2. Had you ever been in a Forest before? 3. Did you ever do something like this before?	*the child's existing knowledge and experience form the base for learning* (PSC principle) *learning is developmental in nature* (PSC principle)
Forest School- Perceptions	
1. What did you think of Forest School? 2. What time in the Forest did you enjoy? Why? 3. Was there a time in the Forest that you did not enjoy? Why? 4. Did you like learning in the Forest?	*social and emotional dimensions are important factors in learning.* (PSC principle) *the child should perceive the aesthetic dimension in learning.* (PSC principle)
How the child learned	
1. What did you learn in Forest School? 2. Was learning in Forest School different to learning in your classroom? If yes, how? 3. Did you like working in the Oak/Willow groups? Why/ Why not? 4. Did you like using the tools (flint and steel/ whittling peelers and ropes)? Why/ why not? 5. What other things did you make or do in the Forest?	*skills that facilitate the transfer of learning should be fostered.* (PSC principle) *collaborative learning should feature in the learning process.* (PSC principle) *learning should involve guided activity and discovery methods.* (PSC principle)
Irish Primary School Curriculum- Assessment	
1. How do you think you did during the whittling/ fire making? (skill making element of the session)	*assessment is an integral part of teaching and learning.*

2. What new things did you learn?	(PSC principle) *the child is an active agent in his or her learning.* (PSC principle)
Impact of Forest Schools on the Learning	
1. Would you like to do Forest Schools again? Why/Why not? 2. Did you practice anything you learned in Forest School at home?	*higher order thinking and problem-solving skills should be developed.* (PSC principle) *the range of individual difference should be taken into account in the learning process.* (PSC principle)

14ᵗʰ May 2019

R: Researcher

I: Ivy

J: Jade

V: Viola

T: Terra

1. *R: So Ivy, had you ever heard of Forest School before?*

2. I: Yeah

3. *R: Where had you heard of Forest School before?*

4. I: Here

5. *R: and Jade, had you ever heard of Forest School before?*

6. J: Yeah

7. *R: Where did you hear about it before?*

8. J: Erm in my Nanny's house

9. R: Oh, how did you hear it in your Nanny's house?

10. J: Erm because they are talking about forests and my Nanny teaches kids in forests as well.

11. *R: lovely, and Viola, had you ever heard about Forest School before?*

12. V: erm in my house

13. *R: how did you hear about forest School?*

14. V: making my cake, Mommy did it (she walks away at this point)

15. *R: ok, and Terra, had you ever heard of Forest School before?*

16. T: (shakes head)

17. *R: no you hadn't. Ok and what did you think of Forest School Ivy?*

18. I: Good

19. *R: What did you think of Forest School Jade?*

20. J: erm, I loved it.

21. *R: and what did you think of Forest School Terra?*

22. T: loved it. At first I hated it but then I liked it.

23. R: Why did you hate it at first?

24. T: Because I thought it was going to be boring

25. R: ok and what made you love it then?

26. T: doing all the stuff

27. R: what kind of stuff?

28. T: erm swinging on the thing and that and going inside of the tents and doing this (Hapa Zome prints)

29. R: Thank you very much, and was there a time, what time in forest school did you enjoy the most?

30. I: The first day

31. R: what happened on the first day

32. I: Cause we went to the stream and we could do whatever we wanted to do in the stream and I went looking for bugs and then I found a bug in the water. It was a lady bug.

33. R: What time in forest school did you really enjoy?

34. J: all the times

35. R: and was there a time in forest school you might not have enjoyed?

36. J: never

37. R: no, and was there a time in forest school that you might not have enjoyed?

38. T: never

39. R: never as well, and what did you learn in Forest School Ivy?

40. I: I learned that how to make flower print is get your fabric and get only a few flowers and then get brick or something and slam it.

41. R: lovely, you're making your Hapa Zome prints there

42. I: yeah

43. R: and what did you learn in Forest School Jade?

44. J: erm, everything, erm like this what we are doing

45. R: yeah, the Hapa Zome prints

46. J: and how to do pottery

47. R: oh lovely

48. R: what did you learn in Forest School?

49. T: Erm flower marks and the tents and learn how to say 'madra' in Irish

50. R: and was learning in Forest School, Ivy, different to learning in school in your classroom?

51. I: yeah,

52. R: how was it different?

53. I: erm because we are outdoors and we are doing different activities

54. R: ok, and Terra, was learning in Forest School different to learning in your classroom?

55. T: Erm I was learning Irish and be kind as well and being kind out here

56. R: and Ivy, was learning in Forest School different to learning in your classroom

57. J: not that much because we already know the rules of school and it's kind of the same thing here, no littering

58. R: Did you use the tools like the whittling and the fire making?

59. J: yeah,

60. R: and how did you think you did when you were using them?

61. J: not good because I don't think I'm allowed at fires but one time I was allowed at a hot grill and it was very dangerous but I know how to use the hot grill 'cause Mom told me.

62. R: and how do you think you did at Forest School at making sparks?

63. I: yeah until Fennel he scared me because he had the thing [flint and steel] and he nearly put fire in my clothes and then I wouldn't do it

64. R: and how did you think you did at using the flint and steel and the whittling tools?

65. I: good

66. R: and Terra, how do you think you did at using the whittling tools and the flint and steel in Forest School?

67. T: erm good

68. R: and would you like to do Forest School again?

69. T: yeah

70. J: yeah

71. I: totally

72. R: totally, and did you practice anything you learned at Forest School at home?

73. J: well I camped in my back garden, yeah and I also made a hammock

74. R: and did you learn how to do that at Forest School?

75. J: yeah

76. I: I put up my trampoline and then I put the thing into the and then I put a tent on to it so it's like a big bouncy castle, instead of buying a bouncy castle and then I went camping in it and I spent 24 hours in it.

77. R: did you, and did you use anything you learned at Forest School to help you when you were out there?

78. I: yeah, I used those flint and steel to make fire and then I put rocks all around where you put in the stuff on it, but I didn't use any coal.

79. R: ok why did you not use coal?

80. I: because we don't use coal in it.

81. R: ok

82. I: I didn't burn plastic because you're not allowed

14th May 2019

R: Researcher

S: Spruce

B: Basil

The boys are throwing rocks out of the stream to see if they can make the water flow stronger as the stream level has reduced in the good weather.

1. ***R: So Basil and Spruce, I'd love to hear, what did you think of Forest School?***

2. S: good

3. B: good

4. ***R: Why did you think it was good?***

5. B: Me and him were both having a water fight today, we are doing this because there is no water.

6. ***R: and is the water your favourite thing about Forest School, or is there other things you like, what else do you like?***

7. B: climbing the tree

8. ***R: and is there a time that you might have not liked in Forest School?***

9. B: eh I don't like when I fall or that

10. ***R: was there any time that you might have not liked Spruce?***

11. S: I hated the first day

12. ***R: you hated the first day, what happened on the first day?***

13. S: Nothing

14. ***R: nothing, but did you like it then after?***

15. S: yeah

16. ***R: and why did you like it after?***

17. S: I don't know

18. ***R: was there things you liked doing in Forest School?***

19. S: I liked everything

20. ***R: was it different to your classroom?***

21. S: yep

22. ***R: how was it different?***

23. S: 'cause there's water and there's no water in my class.

24. R: okay, and would you like to go to Forest School again?

25. S: yeah

Clay, Alder, Amethyst and Amber

Researcher: R

Clay: C

Alder: Al

Amethyst: A

Amber: Amb

Clay and Alder wanted to play in the stream and did not want to take part in the interview. This interview occurred near the stream as that is where the children wanted to walk.

Amethyst was unable to cross the stream due to her mobility issue today and was upset over this.

1. ***R: So we are going to walk down to the stream, so I am going to talk to you, I'm going to talk to you as we are walking down.***

2. Amb: Yeah

3. C: I don't want to, I don't want to

4. ***R: Clay, you don't want to do what?***

5. A: Ah

6. ***R: You don't have to, you can go if you want to***

7. C: I want to jump in puddles with her [go in the stream]

8. ***R: you can go if you want, that's okay. Amethyst, so had you ever heard of Forest Schools before?***

9. A: No

10. ***R: No, you had never heard of it before?***

11. Amb: No, I had never heard of it before.

12. ***R: You had never heard of it before either, Amber?***

13. Amb: No

14. R: and had you ever been in a forest before?

15. Amb: No

16. A: Yeah I have been when I was a baby,

17. Amb: yeah when I was just, when I was a baby but I haven't remembered anyway cause my mother told me I was in a thing for…

18. A: I have when I was a baby as well

19. R: Okay, and what do you think of Forest School?

20. A: It's nice. It's okay. But I don't really remember the back of the forest. I'm only used to, I'm only used to the front cause then I know it.

21. R: Okay, and is this the front or back?

22. A: The back

23. R: and was there a time in the forest that you might not have enjoyed?

24. A: Erm, no.

25. Amb: No. Yeah when they were making the sticks [points to shelter]

26. R: The shelter? You didn't like that? You didn't like building the shelter Amber?

27. Amb: No.

28. R: and erm, what did you learn in Forest School? What did you learn in Forest School Amber?

29. Amb: erm, erm, I learned…

30. A: Amethyst what did you learn in Forest School? Amber is thinking about it

31. A: Nothing

32. R: you learned nothing in Forest School?

33. Amb: Wait, I learned how to make fire

34. R: and was it different to your classroom, Forest School?

35. A: yeah,

36. R: what's different about Forest School?

37. Amb: Erm, it's that you have to do work like in the classroom and like you can play like around

38. R: play in..?

39. Amb: yeah in here

40. R: here in Forest School?

41. Amb: yeah

42. R: okay

43. Amb: that's the difference

44. R: and did you like using the whittling tools?

45. Amb: yeah

46. R: and how did you think you did during fire making? Did you think you were good at making fire?

47. Amb: Me, Ash and we lit the fire but nobody else did

48. R: okay, so you were good at lighting the fire? Yourself and Ash?

49. Amb: yeah we just, we, at the last go Bluebell told us to swap then I got and then I got to light it

50. R: oh great, and did you practice anything you learned in Forest School at home?

51. Amb: no

52. R: no you didn't practice it again at home, okay, that's very good, thanks Amber

53. Clay and Alder approach Researcher

54. R: What are you doing Alder? Are you in the stream? Do you want to talk to me from the stream?

55. Al: No

56. *R: do you want to talk to me from the stream Clay? I'm asking things like, I'm asking did you like Forest School?*

57. C: Yeah

58. *R: what did you like most about it?*

59. C: jumping in puddles [the stream]

60. *R: jumping in the puddles! And had you ever been in the forest before?*

61. C: no, this is my only first time

62. *R: your first time in the forest Clay, wow. And was there a time in Forest School that you didn't like?*

63. C: Alder, do you want to climb trees?

64. Al: Climb trees?

65. C: yeah

66. A: I'm not allowed in the water (unsuitable footwear)

67. *R: that's okay*

68. *R: Clay and Alder is this different than your classroom?*

69. C: [to Alder] so do you want to climb trees?

70. *R: So Amethyst, so what did you learn in Forest School?*

71. A: nothing

72. *R: nothing! Oh you told me that already! And is there anything you made in Forest School?*

73. A: no

74. *R: How do you think you did when you were making the fires?*

75. A: good

76. R: you did good, yeah. And what new things have, might you have learned here?

77. A: what?

78. R: what new things did you learn?

79. A: how did Amber get over there? [across the stream]

80. R: I think she climbed over there [pointed to slope]. Do you want to give it a go?

81. Amethyst leaves to join Amber

82. R: see you later!

20th November 2018

R: Researcher

S: Summer Ru: Ruby

M: Mea B: Brooke

Ro: Roisin C: Clementine

1. ***R: So, had you ever heard of Forest School before?***

2. Ru: Not really, because like

3. C: Not in first class, and not in Junior Infants

4. Ru: as I'm English I've never really heard it before

5. ***R: Ok***

6. B: No

7. ***R: and you hadn't heard of Forest School Brooke and Clementine?***

8. C: I didn't really know it until I was in second class (current class), I only heard of it

9. Ru: same

10. ***R: So you've only heard of it this year.***

11. C: yeah

12. ***R: ok, and had you ever been in a forest before?***

13. C: yeah

14. Ru: yeah

15. B: yeah

16. Ru: I dunno, in England I used to live near one, I used to go in it so like, yeah, I do go into the forest sometimes, but not really

17. ***R: so have you ever done anything like Forest Schools before?***

18. C: yeah

19. B: No

20. Ru: No

21. C: yeah

22. R: Where had you done something like Forest School before?

23. C: I did it in Australia

24. R: In Australia Clementine! Did you live in Australia?

25. Ru: Oh my God!

26. C: yeah

27. [children up tree shouting across]

28. R: What do you think of Forest School?

29. Ru: I literally love it, I love it more than my cat! Well a little bit more, but still my cat's better.

30. B: It's my favourite

31. R: It's your favourite Brooke.

32. R: What do you think of it Clementine?

33. C: I think I like it a bit, I rather stay in bed.

34. R: You what Clementine?

35. C: I'd rather stay in bed than go into the forest.

36. R: You'd rather stay in bed than go to Forest School. Ok, and erm what time did you enjoy in Forest School, what do you like in Forest School?

37. Ru: Climbing the tree and in the hammock

38. B: I love when we just go to the fire

39. R: go to the fire?

40. B: yeah

41. C: Hammock, climbing trees and the lake [stream]

42. Ru: oh and the lake! [stream], yeah same

43. C: oh and the fire, collecting leaves

44. B: oh and collecting leaves

45. R: and was there a time in the Forest that you might not have enjoyed?

46. B: No

47. C: Yeah, loads of things

48. Ru: Erm, probably just like, just like, you know like making something a bit boring like…

49. R: Like what would be boring?

50. C: Like making a card for no reason

51. B: I liked it. No, I never had something bad

52. C: I have. I fell out of the tree

53. R: What was the time you didn't like… you fell out of the tree Clementine?

54. C: Yeah, I fell out of that tree [points]. Uh that hurt my head.

55. R: And did you like learning in the forest?

56. B: Yeah

57. Ru: I dunno, I just learned learning things

58. C: I just learned some random things

59. C: I learned about leaves, and like the lake [stream] and the tree and how to climb the tree. I already knew how to climb a tree, but

60. R: I knew that

61. B: I liked learning about respecting stuff

62. R: Respecting stuff Brooke? Like what?

63. B: Like respecting the trees and nature

64. R: Respecting trees and nature Brooke, is that what you said?

65. B: Yeah

66. R: Ok, and was learning in the forest different to learning in your classroom?

67. C: Yeah

68. Ru: Yeah, obviously

69. B: Yeah

70. B: It was funner than the class

71. Ru: Yeah we can learn more experiences like in the tree, in the hammock, in the swing, like nice experiences

72. R: Ok, and did you like working in your groups?

73. C: I don't like when your building stuff because I find that really boring

74. C: Yeah, it's like 2019

75. R: and did you like using the tools like the flint and steel

76. B: yeah I loved it

77. C: no, no, no

78. Ru: I kinda did

79. R: You liked it Brooke, you didn't Clementine, and you kinda did Ruby. Ok. And why did you like using them Brooke?

80. B: I liked using them because it was kind of fun going like that [demonstrated whittling]. Because I hurt my arm a few days ago and it tickles now.

81. R: Ok, and why did you not like using the tools, the whittling tools Clementine?

82. C: because last time I used them, I cut myself and it, and it was a whole scrape on my finger and it really hurt.

83. R: Ok, and why did you like using them Ruby?

84. Ru: I just, they are kind of like relaxing doing it to be honest.

85. R: Ok, and what other things did you make and do in the forest?

86. Ru: a notebook

87. R: making a notebook?

88. Ru: yeah

89. B: I learned not being scared of heights

90. R: ok, and what did you learn in forest school?

91. C: That foxes are not real

92. R: that what?

93. C: That foxes

94. R: That foxes are not real? Ok, and what, how do you think you did with your whittling?

95. Ru: fine

96. B: I think I done good

97. Ru: It was find of fun

98. R: How do you think you did Clementine?

99. C: Not well

100.   R: Ok

101.   C: Cause that's the day, the last time I whittled I cut all down there [showed finger]

102.   R: and what new things did you learn in Forest School?

103.   B: I learned…

104.   C: about leaves

105.   Ru: You already asked us this question

106.   R: what new things did you learn? Other things

107.   Ru: like how to whittle?

108.   R: yeah

109.   B: I learned how to like

110.   C: how to climb a tree

111.   B: whittle and like not be like scared

112.   Ru: and climbing

113.   R: Would you like to do Forest School again?

114.   C: no, no

115.   Ru: yeah

116.   B: yeah

117.   R: You wouldn't like to do it in school again? Why wouldn't you like to do it Clementine?

118.   C: I'm only joking

119.   Ru: I don't want to do it in school, but I want to do it in here.

120.   R: and why do you want to do it again but not in school?

121.   Ru: because here you can actually climb big trees

122.   C: the school doesn't have big trees and this tree you can nearly fall off it

123.   R: Oh ok, I know what you are getting confused. Ok, you know the way you get on a bus at school and you come here on the bus?

124.   C: yeah

125.   Ru: yeah

126.   *R: and you do it during school time. That's what I mean about doing it in school. Do you think it's a good thing to do in third class, would you like to get the bus and come to the forest again?*

127.   Ru: yeah

128.   C: yeah

129.   *R: yeah, ok, and did you practice anything you learned in Forest School at home?*

130.   B: yeah, whittling

131.   *R: You practiced whittling?*

132.   B: Yeah

133.   C: practice learning how to climb a tree and learning how to whittle and learning how to not slip down hills

134.   *R: Okay, thank you, thanks girls, that's perfect*

R: Researcher

M: Magnolia

Ro: Rosemary

J: Jasmine

P: Peaches

1. *R: Peaches, had you ever heard of Forest School before?*

2. P: no

3. *R: Magnolia, had you ever heard of Forest School before?*

4. M: No

5. *R: Jasmine, had you ever heard of Forest School before?*

6. J: Yes

7. *R: Where did you hear about it?*

8. J: Because my sister told me all about it

9. *R: What's your sister's name?*

10. J: She's Hazel,

11. *R: and she's in Second Class so she would have been to the Forest [in term one]*

12. J: Yes

13. *R: and Rosemary, had you ever heard of Forest School before?*

14. Ro: [shakes head]

15. *R: no, you hadn't. What did you think of Forest School Rosemary?*

16. Ro: Good

17. *R: Why do you think it was good?*

18. Ro: because you got to cross the stream and sometimes get wet

19. *R: and what did you think of Forest School Jasmine?*

20. J: I think it was fun

21. *R: what do you think was fun?*

22. J: Because you got to do different activities

23. R: What kind of activities did you do?

24. J: Play with clay, make um name tags, play in the stream, climb trees, and do all other stuff

25. R: and what did you think of Forest School Magnolia?

26. M: Eh it's good, amazing

27. R: why is that?

28. M: I like going on the adventure walk with the leaves, looking at all the different types of leaves,

29. R: Foraging like?

30. M: yeah and I like doing the smushing the leaves

31. R: The Hapa Zome today?

32. M: Yeah the Hapa Zome

33. R: and what did you think of Forest School Peaches?

34. P: It's good

35. R: Why is it good?

36. P: Eh, because we have fun

37. R: and can you tell me was there a time in Forest School that you may not have enjoyed?

38. M: When it rained (Rosemary nods too)

39. R: Was there a time in Forest School that you may not have liked Jasmine?

40. J: Um when I fell.

41. R: That's understandable. And Peaches, was there a time in Forest School that you may not have liked?

42. P: No

43. R: And did you learn anything new in the forest?

44. J: I learned about um, different type of leaves, and what names they are

45. P: I learned about a lot, how to not be afraid to climb a tree

46. Ro: Yeah, same with me

47. R: So both of you learned how not to be afraid to climb a tree

48. Ro: yeah, I was terrified

49. P: and how not to be afraid of water

50. R: and did you like using the whittling tools and the flint and steel for making fire?

51. Ro: yeah

52. R: Do you think you were good at them or?

53. M: I didn't like the flint and steel, it was really sore on your hands

54. R: It was hard and sore on your hands, okay and erm did you think Forest School was different than learning in your classroom?

55. J: Yes

56. R: How was it different?

57. Ro: 'cause you get all messy

58. R: Did you find anything in your classroom different Jasmine? Did you find learning in Forest School different to learning in your classroom?

59. J: yeah

60. R: what was different?

61. J: 'cause you're out in outside doing nature stuff and inside you're just doing maths and English

62. R: Okay, okay and did you find anything different, did you find learning different than in Forest School than in your classroom?

63. M: A bit, yeah, because we are outside doing it, I like being outside doing it

64. R: Okay, and would you like to do Forest School again Peaches?

65. P: Definitely

66. R: and would you like to do Forest School again Magnolia?

67. M: Yeah

68. R: Would you like to do Forest School aga-

69. J: Definitely, and tomorrow I'm going to Forest School again, this place again

70. R: Oh,

71. J: yeah with um this um this club

72. R: What's the club called?

73. J: "Youth Project"

74. R: So you'll know what to do, you'll be able to show them?

75. J: Yeah I'm going to show them where we basically go

76. R: Great, and Rosemary, would you like to do Forest School again?

77. Ro: Yeah

78. R: and did you practise anything you learned in Forest School at home?

79. M: Whittling, I tried to whittle with a potato peeler

80. P: climbed trees

21st May 2019

R: Researcher

S: Sparrow

M: Marjoram

B: Birk

1. *R: Ok, so my first question is, Sparrow, had you ever heard of Forest School before?*

2. S: Yeah

3. *R: Where did you hear about it before?*

4. S: I heard about it before when I was in XXXXXXXX [this current school] and the first time I came here I was planning to go to a new school, but that was so far from my home and they were planning to go to Forest School, and then I got out of that school because my Dad said it was so far away and I have to do my job and go to this school.

5. *R: that's great, thank you Sparrow, had you ever heard of Forest School Marjoram?*

6. M: Yes, I heard about Forest School when you came in talking to us and I really liked of the idea when you told us about it.

7. *R: Ok, thank you. And Birk, had you ever heard of Forest School before?*

8. B: No

9. *R: Sparrow, what did you think of Forest School?*

10. S: It's good, but I hare one thing about it, it's circle time

11. *R: You don't like the circle time, ok, and what did you think of Forest School Marjoram?*

12. M: I really liked it, but that's the same as me, I don't really like the circle time.

13. *R: Ok and what did you think?*

14. B: I thought it was amazing, it's just the midges but you get them everywhere so it was alright

15. *R: Ok, so you've mentioned something that you didn't enjoy, but what did you enjoy about Forest School Sparrow?*

16. S: I enjoyed playing catch with my friends, and climbing the trees, making my own swing

17. *R: ok, and what did you enjoy about Forest School Marjoram?*

18. M: I enjoyed the bit about making nametags with the saw and whittling and climbing trees and playing catch with my friends

19. *R: ok, and what did you enjoy about Forest School?*

20. B: Everything

21. *R: Everything?*

22. B: Yeah

23. *R: Ok, and erm you've mentioned the circle time Sparrow, but was there another time in Forest School that you might not have enjoyed?*

24. S: [shakes head]

25. *R: You're shaking your head, no?*

26. S: No

27. *R: Was there another time in..*

28. M: Yes, when I bounced my head, right there

29. *R: ok, fair enough, and was there a time in Forest School that you might not have liked Birk?*

30. B: Erm, I don't know, I don't think so, maybe

31. *R: and what did you learn in Forest School Sparrow?*

32. S: I learned a lot, but I can't say what I learned

33. *R: ok, and what did you learn?*

34. M: I learned about like never throw rubbish around and always be kind to your friends

35. *R: Lovely, and what did you learn in Forest School?*

36. B: a bit more about nature

37. *R: ok, like what?*

38. B: like different types of leaves and all that

39. M: and you can eat more leaves

40. *R: You learned you can eat some leaves as well?*

41. M: Yeah

42. *R: Hmm, thanks Marjoram. And erm, was learning in Forest School different to learning in your classroom?*

43. S: Yeah, a thousand times different.

44. *R: what was different?*

45. S: I liked the fresh air, and I like, in class you just have to do whatever teacher tells you and here you can do whatever you want to do

46. *R: ok, and was there any, did you think learning in the forest was different to learning in your class?*

47. M: Yeah, it's because you learn about more nature things and the sun is always shinning on you and you have more fresh air out

48. *R: Ok, and did you find learning in Forest School different to learning in your classroom?*

49. B: Yeah,

50. *R: How is it different?*

51. B: erm, because like you're allowed do a lot more stuff than you're allowed do in a classroom like you're allowed run free here but in a classroom you learn a lot.

52. M: yeah and you learn about more new nature stuff

53. *R: Ok, and did you like using the tools, like the flint and steel?*

54. B: Oh I loved it

55. S: I didn't try that

56. M: I never tried that

57. *R: So, Sparrow, you didn't try the flint and steel? You didn't use it either Marjoram?*

58. B: I loved it

59. S: I found it boring

60. *R: You liked using the flint and steel?*

61. B: Yeah, so, like we had a shell and the cotton wool on it and we used the flint and steel and then you like rub it up and put it underneath the cotton wool and it become a little mini fire.

62. *R: Lovely, and did you use the whittling tools Sparrow?*

63. S: No, I usually didn't use any sort of tool that makes you sit down

64. *R: ok, and did you use the whittling tools Marjoram?*

65. M: Yeah, it was actually really fun

66. *R: Ok, you enjoyed that, and erm, what other things did you make and do in Forest School?*

67. S: I made the necklace

68. R: You make the necklace with the bowsaw?

69. S: Yeah and I painted it

70. M: I done the necklace thing and I also ate some leaves and they tasted really good

71. R: ok and would you like to do Forest School again?

72. B: Yeah

73. R: why?

74. B: because I love it here and we can run everywhere and the sun shines down on you

75. R: ok and would you like to do Forest School again?

76. M: Yes, I would because there's like more nature things and you can run wild and play with your friends all the time

77. S: I definitely like it!

78. R: Why?

79. S: Hmm because I like running with my friends

80. R: and when you went home from Forest School did you practise anything you learned in Forest School when you went back home?

81. B: Well I asked my Mom could I get the flint and steel, but she said like there's not much point because we don't go camping really

82. R: Did you practise anything you learned in Forest School at home?

83. M: Not much, no

84. R: and Sparrow, did you practise anything you learned in Forest School at home?

85. S: Not that much

86. R: Not that much, was there anything?

87. S: Yeah, I learned how to make the necklace and I made one at home as well

88. R: You made a wood cookie, you sawed it at home?

89. S: Yeah

13th November 2018

R: Researcher

O: Oleander

Ro: Rocky

1. ***R: Ok, do you want to go for a walk while we are doing this? Or just stay here?***

2. O: Just stay here.

3. ***R: ok, perfect, ok, so had you ever heard of Forest School before?***

4. Ro: erm

5. ***R: before you came to this forest with your school***

6. O: I had heard about boy scouts

7. ***R: ok, and you hadn't heard about Forest School. Had you ever been in a forest before?***

8. O: yeah, 12 times. All on bike trips.

9. Ro: a lot

10. O: the final one being my last

11. ***R: ok***

12. O: ever bike trip

13. ***R: Ok, and so did you ever do something like this before, what you do in the Forest School.***

14. Ro: eh no, not really, but it's fun

15. O: I'd say no, yeah; nah. I didn't ever do something like this before

16. ***R: ok, so what do you think of Forest School?***

17. Ro: it's great

18. O: it's great, although I must say there's some "denefits"; opposite of benefits

19. R: There are some benefits? Or

20. O: "Denefits", I created it, it's the opposite of benefits; "denefits"

21. R: ok, and what "denefits" would you say there are in Forest School?

22. O: Uh well the "denefits" are that, you know, there is only so many thing you can fit into one day, right.

23. R: so what would you like to do differently?

24. O: Hmm, well [someone calls him] Strictly confidential information,

25. R: so what would you like to do differently?

26. O: Eh I wish we could extend our time here, but I know we have to go home at half 2 and clean the classroom. Eh, I wish we had more time in Forest School, if we left at 11.

27. R: ok

28. Ro: yeah that would be cool

29. R: that's good feedback to hear, thank you

30. Ro: I'd also like there to be like more swings

31. R: ok

32. O: I know

33. R: perfect. And did you like learning in Forest School?

34. O: Of course!

35. Ro: Yes!

36. R: you did?

37. Ro: of course

38. R: what did you learn?

39. O: I learned how to make a fire using

40. Ro: I learned how to whittle

41. O: of course I was only making sparks, you know, I could never really ignite a real fire in those cotton balls and sea shells

42. Ro: yeah, I learned how to whittle, like obvi, like actually was sometimes like if in fruits, taking off the skin. But whittling is eh ah meaning like eh the sticks thing.

43. O: and here's the funny thing, whenever I would do eh the flint and steel activity, do you know what would happen?

44. R: what?

45. O: Id be making sparks, making sparks, making sparks and the person who goes next, my partner, I'll, they, the next flint and steel like this [demonstrates], they would literally just start the fire!

46. R: oh dear!

47. Ro: that was me

48. O: such a feeling of disappointment!

49. Ro: yeah

50. R: eh, and was learning in Forest School different to learning in your classroom?

51. O: Much more different

52. Ro: yeah

53. O: so much more space and

54. Ro: in the forest

55. O: we can learn while moving so I don't have to get stuck in the claustrophobic seats next to a girl who copies my work on tests!

56. R: oh dear!

57. Ro: and also in the forest, eh kind of we are learning about survival things

58. O: exactly

59. Ro: and about, cause in the classroom we don't really learn about things like flint and steel

60. **R: ok,**

61. O: yeah

62. **R: so it's different**

63. Ro: yeah

64. **R: ok, and did you like using the tools like the flint and steel and the whittling**

65. Ro: yeah, it was my favo…

66. O: yes, I felt like a Bear Grylls, watching Bear Grylls

67. **R: ah**

68. Ro: same, the only difference is that, I forgot!

69. **R: ok, and eh and erm, how did you think you did during the fire making and the whittling?**

70. O: I would say I did horrible, because you know, all, all, all that flint and steel and then "Oh let me try" and then fire!

71. Ro: I then I did it and then from at the second try I just did it

72. **R: ok, so you found the fire making okay?**

73. Ro: yeah, it's actually fun.

74. O: I didn't find it so okay. I didn't find it hard, I could make so many sparks at once it would just be always like, the second person, their first thing and they would already have a fire. While it took me like 12 to get like 52 sparks in total out of all those 12.

75. **R: and would you like to do Forest Schools again?**

76. Ro: yeah, yeah

77. O: of course

78. Ro: it's so much fun

79. R: yeah? You'd like to do it again? Erm and why would you like to do it again?

80. O: because then we can play more with our friends and this is the only real time I get out during the week.

81. Ro: It's fun, we learn, we actually even learn things that are fun, like

82. O: yeah

83. Ro: not that school things aren't fun but they are, but eh in the forest it is actually more fun

84. O: yeah because in school it has actually been confirmed from study that 95% of which you learn is a waste

85. R: really?

86. O: yep, studies can study

87. R: did you practise, when you went home from Forest School, was there anything you liked to practise at home?

88. O: I couldn't really practice anything because my mom refuses to spend money on anything. We need to save up €90,000 for a new house so I can start a dog breedery.

89. Ro: well I would like to practise the flint and steel if I had it

90. R: ok, thank you so much for talking to me today, I really appreciate it

91. O: you're welcome

20ᵗʰ November 2018

R: Researcher

C: Cliff

B: Birdie

F: Fleur

1. ***R: Cliff, had you ever heard of Forest School before?***

2. C: Eh, not before the week you came in.

3. ***R: Ok, have you ever heard of Forest School before?***

4. B: Yeah

5. ***R: where did you hear about it?***

6. B: In Youthwork Ireland

7. ***R: In Youth Work Ireland, ok.***

8. ***R: and where did you hear about it, Fleur, or had you ever heard about Forest School Fleur?***

9. F: No

10. ***R: ok, and had you ever been in the forest before?***

11. C: No

12. B: yeah

13. ***R: Had you ever been in the forest before?***

14. F: yeah

15. ***R: when?***

16. F: just a few months ago

17. R: with your family or friends?

18. F: with my family

19. R: ok, and have you ever done anything like this before like Forest School before?

20. C: No, I have never done anything like it before

21. R: have you ever done anything like

22. B: [shakes head]

23. R: well, you didn't do it in Youth Reach Ireland? You didn't do anything like Forest School?

24. B: [shakes head}

25. R: No, ok. And did you ever do anything like Forest School before?

26. F: No

27. R: Ok, what did you think of Forest School?

28. C: I think it was actually kind of fun. It made me like actually be imaginative and do stuff that I won't be able to usually do at home.

29. R: ok, what did you think of Forest School?

30. B: I liked it, but then again I didn't like it.

31. R: ok

32. B: Cause, I don't know why I didn't like it.

33. R: Ok, what did you like about it?

34. B: the fire; I liked the marshmallows

35. R: Ok, and what did you not like about it?

36. B: that we didn't have an actual bathroom

37. R: ok, and what did you think of Forest School Fleur?

38. F: I loved the Forest School and it gave me more courage to climb trees and I loved the fire and you know that kind of stuff.

39. R: and what time did you enjoy in the forest? What time did you enjoy the most?

40. C: usually just do random stuff time, I guess.

41. R: ok, your free time like?

42. C: yeah

43. R: and what time did you enjoy in the forest the most?

44. B: erm, trying to light the fire and trying to melt the marshmallows

45. R: melting the marshmallows on the fire, yeah. And what did you enjoy, what was your favourite time?

46. F: climbing up the tree.

47. R: Ok, and was there a time that you might not have enjoyed in Forest School?

48. C: eh usually just the start. Where she like talks and stuff, like it makes me feel a bit still, I dunno.

49. R: ok, and was there a time you might not have enjoyed in the forest?

50. B: no.

51. R: no? ok. And was there a time you might not have enjoyed in the forest?

52. F: no

53. R: and did you like learning in the forest?

54. F: yeah

55. R: you liked learning in the forest Fleur.

56. F: yeah

57. R: did you like learning in the forest?

58. C: Yeah

59. R: What did you learn?

60. C: I learned that actually no animals hibernate in Ireland.

61. R: No animals?

62. C: hibernate in Ireland

63. R: ok. And erm erm, was learning in the forest different to your classroom?

64. F: eh yeah, kind of, yeah it is

65. R: what's different?

66. F: It's different that you get to run around a lot and you can go where ever you like whenever you want and you learn loads of stuff about forests and animals and yeah

67. R: do you think, is learning in the forest different to learning in your classroom?

68. C: yeah

69. R: what's different?

70. C: It's the same as Fleur, it's like you feel free and you can like go around and do all the stuff you can.

71. R: ok and do you think learning in the forest is different to learning in your classroom?

72. B: No,

73. R: No, ok. And did you like working in your oak and willow groups?

74. C: Yeah I liked that

75. R: you liked working in the groups?

76. C: yeah

77. R: did you like working in your Oak and Willow groups?

78. F: yeah, I love working in groups

79. *[Birdie is in and out of the interview here as she leaves to talk to other children and returns]*

80. R: and did you like using the tools like the flint and steel and the whittling?

81. C: yeah

82. F: yeah, that was especially good , I never heard of them before

83. B: I didn't like them

84. R: why didn't you like them Birdie?

85. B: because like, because it was like, like kinda hard to use them

86. R: Yeah, and what did you say about using the tools Cliff?

87. C: Eh, like, I haven't used them before and like, like, I don't know.

88. R: ok, and what other things did you make and do in the forest?

89. C: eh well I built a shelter like around down there [points] and we kind of just took it apart because it's the last day.

90. R: ok, and what other things did you make or do in the forest?

91. F: erm, climbed the tree, erm, make little kinda mini fires, eh I did some whittling and yeah.

92. R: ok, and how do you think you did during the whittling and fire making?

93. C: I think I honestly did ok, like I wasn't that good, I wasn't that bad.

94. R: ok, but you were learning.

95. C: yeah

96. R: How do you think you did during the whittling and fire making?

97. F: well I felt good, and you know, I did successfully after a few tries and yeah

98. R: ok, so what new things did you learn in Forest School?

99. C: um like, how to actually make fire with flint and steel cause I thought it was just like an immediate burn, but like you actually needed to do stuff' like do it hard enough to make it spark at least.

100. R: yeah, good point. And what did you learn?

101. F: erm, I learned how to whittle and how to make a proper fire and erm I learned how to roast marshmallows and what they taste like.

102. R: and would you like to do Forest School again?

103. C: Yeah

104. R: why?

105. C: I dunno, it just made me feel free at least like being cramped in a classroom for a couple of hours is kinda, it's like, it just doesn't feel that good.

106. R: ok, and would you like to do Forest School again?

107. F: yeah, I'd like to do it like everyday, and like Cliff said, in a classroom you can get a bit bored and you know, and yeah.

108. R: ok, and did you practise, when you went home did you practise anything you learned in Forest School at home?

109. F: well

110. C: Not really, besides climbing trees

111. F: yeah

112. R: You climbed the trees at home?

113. F: yeah

114. R: and was that something you had learned how to do in Forest School?

115. F: well yeah

116. C: yeah, I can climb trees better cause like of the grandfather tree [name of large beech tree].

117.   *R: yeah you were able to practise?*

118.   F: and it gave me more courage, you know to climb trees

119.   *R: Ok, you got to practise?*

120.   F: yeah

121.   *R: Thank you so much for talking to me, that's it today*

**Mary Immaculate College
Research Ethics Committee**

MIREC-4: MIREC Chair Decision Form

APPLICATION NUMBER:	A18-020 FINAL

1. PROJECT TITLE

How children and teachers in four primary school classes perceive the impact of the introduction of the Forest School sessions on Teaching and Learning'

2. APPLICANT

Name:	Marie Claire Murphy
Department / Centre / Other:	Reflective Pedagogy & Early Childhood Studies
Position:	Postgraduate Researcher

3. DECISION OF MIREC CHAIR

	Ethical clearance through MIREC is required.
	Ethical clearance through MIREC is not required and therefore the researcher need take no further action in this regard.
✓	Ethical clearance is required and granted. Referral to MIREC is not necessary.
	Ethical clearance is required but the full MIREC process is not. Ethical clearance is therefore granted if required for external funding applications and the researcher need take no further action in this regard.
	Insufficient information provided by applicant / Amendments required.

4. REASON(S) FOR DECISION

A18-020 - Marie Claire Murphy - How children and teachers in four primary school classes perceive the impact of the introduction of the Forest School sessions on Teaching and Learning'

I have reviewed the revised application and I believe it now satisfies MIREC requirements. The application is therefore approved.

5. DECLARATION (MIREC CHAIR)

Name (Print):	Dr Áine Lawlor
Signature:	*Áine Lawlor*
Date:	4th May 2018

MIREC-4 Rev 3   Page 1 of 1

RESEARCH & GRADUATE SCHOOL OFFICE

Oifig Taighde agus Scoil na gCéimithe

MARY IMMACULATE COLLEGE   **COLÁISTE MHUIRE GAN SMÁL**

- UNIVERSITY OF LIMERICK -   - OLLSCOIL LUIMNIGH –

Forest School in the Irish Primary School Curriculum

Department of Reflective Pedagogy and Early Childhood Studies,

Mary Immaculate College,

South Circular Road,

Limerick

Date xxx

Dear XXXXX,

Forest School is an inspirational process, that offers all learners regular opportunities to achieve and develop confidence and self-esteem through hands-on learning experiences in a woodland or natural environment with trees.

An evaluation of Forest School in the Irish Primary School Curriculum is being conducted by Marie Claire Murphy, PhD candidate in Mary Immaculate College, Limerick.

The objective of the evaluation is to consider the teacher and children's perspective of Forest School sessions in XXXXXXXXX N.S.

The study consists of observations during the sessions and interviews with participating class teachers and children upon completion of the Forest School block. The researcher would like to invite your school to participate in the research.

Observations will be handwritten by the researcher. It will be necessary to record interviews on an audio device to ensure that the information gathered is accurate. All data will be closely examined to identify the perceptions and attainment of teaching and learning aims during the sessions. The researcher will also take group photographs of the sessions that will be used for the sole purpose of the discussion with the class teacher during the interviews.

Teacher and student participation in the research will be entirely voluntary, and he or she will be free to refuse to answer any question and may choose to withdraw from the project at any time. Electronic and written information will be kept strictly confidential, subject to the limitations of the law. Excerpts from the data collected during the research process may be used in the final report, but under no circumstances will names or any identifying characteristics be included. Data collected for the research will be stored securely on a password protected computer and in locked cabinets. All data will be destroyed after a period of seven-years. Data may be used in an anonymous form in any publications that arise from this research.

I have also included an Information Sheet for your information.

In the meantime, please do not hesitate to contact me at (08X) XXXXXXX, should you have any queries.

If you have concerns about this study and wish to contact someone independent, you may contact:

MIREC Administrator

Mary Immaculate College

South Circular Road

Limerick

061-204980

mirec@mic.ul.ie

Yours Sincerely,

_____

Marie Claire Murphy

<u>RESEARCH & GRADUATE SCHOOL OFFICE</u>

<u>Oifig Taighde agus Scoil na gCéimithe</u>

<u>MARY IMMACULATE COLLEGE</u>   <u>COLÁISTE MHUIRE GAN SMÁL</u>

<u>- UNIVERSITY OF LIMERICK -</u>   <u>- OLLSCOIL LUIMNIGH –</u>

<u>Board of Management Information Sheet</u>

Title of the Research Project: 'How children and teachers in four primary school classes perceive the impact of the introduction of the Forest School sessions on Teaching and Learning'

Researcher: Marie Claire Murphy

What is the research study about?

I am undertaking research on the perceptions of teachers and children to the introduction of Forest School in the Irish Primary School system. I will observe the Forest School sessions in an Irish primary school. This intervention will be observed in four different class levels over the period of 10 weekly sessions.

The Forest School leader is a member of the Heritage in Schools panel, is a qualified Forest School leader. They will deliver the Forest School sessions as Heritage in Schools visits.

The results of this research will contribute to a research dissertation for the Structured PhD in Education in Mary Immaculate College, Limerick. Dr Emer Ring, Dr Kathleen Horgan and Dr Lisha O Sullivan are the supervisors and may be contacted at Emer.Ring@mic.ul.ie, Kathleen.Horgan@mic.ul.ie and Lisha.OSullivan@mic.ul.ie.

Purpose of the Research Study

The specific aims of the study are to:

- Document the teacher and children's perceptions of the Forest School framework
- Evaluate the teaching methodologies of Forest School in the Irish Primary School

403

Proposed methods of Data Collection

The data will be collected through observations and semi-structured interviews with the teachers and groups of children.

Confidentiality Arrangements

The school, teachers or children will not be identified in the study. The data collected for this project will be kept confidential and will only be accessible to the researcher.

Data Storage

Research data will be stored for 7 years. Interview transcripts and electronic data (which will be password protected and stored on hard drives) will be stored in a locked file.

Ethical permission to conduct this research has been granted by the Ethics Committee in Mary Immaculate College (MIREC). The MIREC Administrator can be contacted at: Mary Collins, MIREC Administrator, Research and Graduate School, Mary Immaculate College and at: mirec@mic.ul.ie

Please do not hesitate to contact me at Marie.Egan@mic.ul.ie, should you require further information, or should you request a copy of the research.

Yours Sincerely,

_____

Marie Claire Murphy

RESEARCH & GRADUATE SCHOOL OFFICE

Oifig Taighde agus Scoil na gCéimithe

MARY IMMACULATE COLLEGE   COLÁISTE MHUIRE GAN SMÁL

- UNIVERSITY OF LIMERICK -   *- OLLSCOIL LUIMNIGH –*

Forest School in the Irish Primary School Curriculum

Department of Reflective Pedagogy and Early Childhood Studies,

Mary Immaculate College,

South Circular Road,

Limerick

Date xxx

Dear Parent(s)/Guardian(s),

Forest School is an inspirational process, that offers all learners regular opportunities to achieve and develop confidence and self-esteem through hands-on learning experiences in a woodland or natural environment with trees.

An evaluation of Forest School in the Irish Primary School Curriculum is being conducted by Marie Claire Murphy, PhD candidate in Mary Immaculate College, Limerick.

The objective of the evaluation is to consider the teacher and children's perspective of Forest School sessions in XXXXXXXXX N.S.

The study consists of observations during the sessions and interviews with participating class teachers and children upon completion of the Forest School block. The researcher would like to invite your school/class to participate in the research.

Observations will be handwritten by the researcher. It will be necessary to record interviews on an audio device to ensure that the information gathered is accurate. All data will be closely examined to identify the perceptions and attainment of teaching and learning aims during the sessions. The researcher will also take group photographs of the sessions that will be used for the sole purpose of the discussion with the class teacher during the interviews and will be destroyed/deleted directly after that discussion.

Teacher and student participation in the research will be entirely voluntary, and he or she will be free to refuse to answer any question and may choose to withdraw from the project at any time. Electronic and written information will be kept strictly confidential, subject to the limitations of the law. Excerpts from the data collected during the research process may be used in the final report, but under no circumstances will your name or any identifying characteristics be included. Data collected for the research will be stored securely on a password protected computer and in locked cabinets. All data will be destroyed after a period of seven-years. Data may be used in an anonymous form in any publications that arise from this research.

If you are interested in having your school/class participate in the research, I would be grateful if you would sign the attached form providing consent for your child.

I have also included a Participant Information Sheet for your information.

In the meantime, please do not hesitate to contact me at (08X) XXXXXXX, should you have any queries.

If you have concerns about this study and wish to contact someone independent, you may contact:

MIREC Administrator

Mary Immaculate College

South Circular Road

Limerick

061-204980

mirec@mic.ul.ie

Yours Sincerely,

RESEARCH & GRADUATE SCHOOL OFFICE

Oifig Taighde agus Scoil na gCéimithe

MARY IMMACULATE COLLEGE	COLÁISTE MHUIRE GAN SMÁL
- UNIVERSITY OF LIMERICK -	- OLLSCOIL LUIMNIGH −

Parental(s)/Guardian(s) Information Sheet

Title of the Research Project: 'How children and teachers in four primary school classes perceive the impact of the introduction of the Forest School sessions on Teaching and Learning'.

Researcher: Marie Claire Murphy

What is the research study about?

I am undertaking research on the perceptions of teachers and children to the introduction of Forest School in the Irish Primary School system. I will observe the Forest School sessions in an Irish primary school. This intervention will be observed in four different class levels over the period of 10 weekly sessions.

The results of this research will contribute to a research dissertation for the Structured PhD in Education in Mary Immaculate College, Limerick. Dr Emer Ring, Dr Kathleen Horgan and Dr Lisha O Sullivan are the supervisors and may be contacted at Emer.Ring@mic.ul.ie, Kathleen.Horgan@mic.ul.ie and Lisha.OSullivan@mic.ul.ie.

Purpose of the Research Study

The specific aims of the study are to:

- Document the teacher and children's perceptions of the Forest School framework
- Evaluate the teaching methodologies of Forest School in the Irish Primary School

Proposed methods of Data Collection

The data will be collected through observations and semi-structured interviews with the teachers and groups of children. The researcher will also take group photographs of the sessions that will be used for the sole purpose of the discussion with the class teacher during the interviews and will be destroyed/deleted directly after that discussion.

Confidentiality Arrangements

The school, teachers or children will not be identified in the study. The data collected for this project will be kept confidential and will only be accessible to the researcher.

Data Storage

Research data will be stored for 7 years. Interview transcripts and electronic data (which will be password protected and stored on hard drives) will be stored in a locked file.

Ethical permission to conduct this research has been granted by the Ethics Committee in Mary Immaculate College (MIREC). The MIREC Administrator can be contacted at: Mary Collins, MIREC Administrator, Research and Graduate School, Mary Immaculate College and at: mirec@mic.ul.ie

Please do not hesitate to contact me at Marie.Egan@mic.ul.ie, should you require further information, or should you request a copy of the research.

Yours Sincerely,

_____

Marie Claire Murphy

RESEARCH & GRADUATE SCHOOL OFFICE
Oifig Taighde agus Scoil na gCéimithe

MARY IMMACULATE COLLEGE   **COLÁISTE MHUIRE GAN SMÁL**

- UNIVERSITY OF LIMERICK -   - OLLSCOIL LUIMNIGH -

Parent(s)/Guardian(s) Consent Form

Title of Research Project: How children and teachers in four primary school classes perceive the impact of the introduction of the Forest School sessions on Teaching and Learning.

Researcher: Marie Claire Murphy

Please read the attached information sheet prior to signing this consent form.

No

My child can not partake in the research

Yes

My child can partake in the research – *complete below*

I, the undersigned, declare that I am willing to let my child (name) _____ partake in the research.

1. I have read and understood the participant/parent/responsible other information sheet.

2. I understand what the project is about, and what the results will be used for.

3. I am fully aware of all of the procedures involving (name) _____, and of any risks and benefits

associated with the study.

4. I know that my child's participation is voluntary and that they can withdraw from the project at any stage

   without giving any reason.

5. I am aware that my results will be kept confidential

6. I consent to my child being included in group photos.

_____

Child's Name

_____   _____

Print Name   Date

_____   _____

Signature   Date

RESEARCH & GRADUATE SCHOOL OFFICE

Oifig Taighde agus Scoil na gCéimithe

MARY IMMACULATE COLLEGE   COLÁISTE MHUIRE GAN SMÁL

- UNIVERSITY OF LIMERICK -   *- OLLSCOIL LUIMNIGH –*

<u>Forest School in the Irish Primary School Curriculum</u>

Department of Reflective Pedagogy and Early Childhood Studies,

Mary Immaculate College,

South Circular Road,

Limerick

Date xxx

Dear Student,

My name is Marie Claire Murphy and I am a research student in Mary Immaculate College in Limerick.

I am here in your school to listen to you about Forest School.

I will watch your class learn during your Forest School sessions and take notes. I would also like to talk to you and your friends about what you learned during Forest School.

I will take photographs of the whole class when you are in the Forest School session and use these photographs when I am talking to your teacher, I will destroy/delete these photographs after this discussion.

Would you like to take part in this research? (You do not have to, and you will still go to Forest School each week).

You can read more about my project on the next page, and if you are happy to do this, I will ask you to tick the 'yes' box on the consent form.

Please feel free ask me any questions about this that you may have.

Yours Sincerely,

_____

Marie Claire Murphy

RESEARCH & GRADUATE SCHOOL OFFICE

Oifig Taighde agus Scoil na gCéimithe

MARY IMMACULATE COLLEGE   COLÁISTE MHUIRE GAN SMÁL

- UNIVERSITY OF LIMERICK -   - OLLSCOIL LUIMNIGH –

Student Information Sheet

Title of the Research Project: 'How children and teachers in four primary school classes perceive the impact of the introduction of the Forest School sessions on Teaching and Learning'

Researcher: Marie Claire Murphy

What is the research about?

I am a student in Mary Immaculate College, Limerick. I am doing '*research*' which is listening to teachers and students and finding out about how they feel about Forest School. I will write about this in my book. It is important that I hear your thoughts about Forest School!

How will you do this?

I will watch the learning during Forest School and write notes. I will ask you and your friends your thoughts and feelings about the sessions and record what you tell me. ***I will be the only person who will listen to this.***

I will write about what I see and what you say in a book. Your city and the name of your school will not be used in this book. Your teacher's name will not be used. Your name will not be used.

I will take photographs of your class as you are learning in Forest Schools. This will be group photos. The photographs will be used when I am talking to your teacher, I will delete and destroy them afterwards.

You do not have to say yes to this and you can still go to the Forest School sessions.

You can decide to leave this research at any time, and I will not ask any questions.

If you want to know any more information, please do not hesitate to ask me.

Yours Sincerely,

_____

Marie Claire Murphy

RESEARCH & GRADUATE SCHOOL OFFICE

Oifig Taighde agus Scoil na gCéimithe

MARY IMMACULATE COLLEGE COLÁISTE MHUIRE GAN SMÁL

- UNIVERSITY OF LIMERICK - - OLLSCOIL LUIMNIGH –

Student Assent Form

Title of Research Project: How children and teachers in four primary school classes perceive the impact of the introduction of the Forest School sessions on Teaching and Learning

Researcher: Marie Claire Murphy

Please read the attached information sheet prior to signing this consent form.

I would like to be in the research	Yes	No

(Read by researcher where appropriate)

1. I have read and understood the information sheet.

2. I am fully aware that Claire will observe the learning during Forest School and will record the conversation.

3. I know that I can withdraw from the project at any stage without giving any reason.

4. I am aware that the results will be kept private and my name will not be used.

415

5. I understand that Claire will take photographs of groups of children during learning during Forest School to show to my teacher and she will delete and destroy them after.

_____   _____

Print Name   Date

_____   _____

Signature   Date

Forest School

<u>Additional Needs Information Sheet</u>

Please complete this form outlining strategies to support children with needs that you feel the Forest School Leader should be aware of.

Child's First Name/Initials: _____

Likes/ High Interests	
Dislikes/ Triggers	

Behaviour Strategy:

_____

_____

_____

_____

Person to liaise with in regard to this plan (SNA/SET/Teacher):

_____

Forest School

Class: _____

Dear Parent(s)/Guardian(s),

We are really excited to bring **Forest School** to Scoil XXXXXXXX! Forest School is an approach to learning outdoors.

These sessions will begin on February 5th 2019.

Your child's Forest School sessions will be held in XXXXXXX during school time on:

- Feb 5th, 12th
- Mar 5th, 12th, 19th, 26th
- Apr 2nd, 9th, 30th
- May 7th

They will travel to the woods by bus. The Forest School sessions and the bus are **free of charge**.

They will be run by a qualified forest school leader and your child's teacher will be present at all times during these sessions.

Please ensure your child has a warm, waterproof coat and clothes that you do not mind getting dirty.

Kind Regards,

_____

K.4 Forest School Leader's Plan of Learning

Weeks	Lesson plan	Outcome
Week 1	What is Forest school? Circle time & check in Exploring our surroundings Learning our boundaries Free play	How can we feel safe in the forest? Uses our senses Identifying trees, plants, animals (flora and fauna) Who lives here?
Week 2	Circle time & check in Nature Creation –Craft and creation –mini beast mansions, clay creations and den building Story telling in teams Free play	Team building Dexterity Numeracy Literacy
Week 3	Circle time & Check in Games- Blind fold games to sharpen senses and develop trust Craft creation Learning about fire, safety and flint and steel	Tapping deeper into emotional intelligence
Week 4	Circle time & check in Foraging walk and deeper learning of plants and trees through games. Tracking of animals Free play	ID of natural surroundings Sense of place
Week 5	Circle time & check in Ropes- learning knots, free play, Whittling with peelers Dens and craft Camera mind Circle time	Dexterity Memory
Week 6	Circle time & Check in Scavenger hunt- ID and memory games Compass- how to track where we are Fire-Flint and steel Circle time	Maths, Geography, Science
Week 7	Circle time & check in Blind trails, games, free play -Clay, Dens and games Circle time	Sensory exploring

Week 8	Circle time & check in Exploring deeper- walk about in the woods, what have we learnt about the forest. Free play Circle time	Deepening our knowledge on our surroundings Deepening curiosity
Week 9	Uses our senses Flint and steel and cooking on the fireside. Circle time	
Week 10	Circle time & check in Winter nature crafts Making reindeer Wreaths etc Dens, shelter, ropes, free play Story time review of time together and enquiry in terms of needs and wants for next term together	

An Garda Síochána

Biúró Náisiúnta Grinnfhiosrúcháin,
Bóthar an Ráschúrsa,
Durlas,
Contae Thiobraid Árann.

Teileafón / Tel: (0504) 27300
Facs / Fax: (0504) 27373

Bí linn/Join us

National Vetting Bureau,
Racecourse Road,
Thurles,
Co. Tipperary.

Láithreán Gréasáin/Web Site: www.garda.ie

Luaig an uimhir tagarta B.N.G. a leanas le do thoil/
Please quote the following N.V.B. Ref. No: **TEC001-20160906-00785**

Vetting Disclosure

Margaret Dempsey
The Teaching Council

Re: Marie Claire Egan, ███████████████████████████████

Pursuant to your application within the provisions of Section 13 of the National Vetting Bureau (Children and Vulnerable Persons) Acts 2012 to 2016 in respect of the above named, the herewith vetting disclosure is issued to you within the provisions of Section 14 of the National Vetting Bureau (Children and Vulnerable Persons) Acts 2012 to 2016.

Searches were conducted on the **12/09/2016** .

Criminal Record

NIL

Please Note: If the above-named asserts that this criminal record is inaccurate, the Liaison Person should address the matter in writing to the National Vetting Bureau.

Specified Information

NIL

Sarah Meyler **Superintendent**
Sarah Meyler

This is to certify that

Claire Murphy

has successfully completed

'Introduction to Children First'

Elearning Programme

Date completed: 14 February 2018

Signed:

Fred McBride
Chief Executive
Tusla – Child and Family Agency

Observation Running Records: *Categories and Sub-categories*

Class Teachers' Interviews: *Categories and Sub-categories*

Disconnect from nature

Skills

Nature based learning

Teachers' previous experience

Planning and adaption

Planning

Assessment

Subjects

Forest School Leader's passion for nature

Environment

Process learning

Active

Methodologies

Self-esteem

Emotions

Discovery learning

Social

Social development

Different approach

Guided Learning

Collaboration

Opportunities

Experience

Dyslexia

Disadvantaged school

Challenges of funding

Distractions

Inclusion

Meeting the needs of the children

Novelty

Challenges

Fall

Sensory issues in the woods

Safe

Boundaries

Challenges of timetabling

Classroom management

Listen

Show them the safe way

Traveller

Samhain

Routine

Behaviour Management

Health and safety concerns in school

City kids

Culture

Behaviour concerns

Power struggle in class

Chaotic

Family

Hallowe'en

Free

Accountability

Planning

Lack of assessment

Family

Forest school leader curriculum knowledge

Need for planning

Experience

Heritage

Class teachers' outdoor pedagogy experience

Safety

Staffing

Risk assessment

Coordinating teacher

Heritage in Schools

Need for collaboration

Funding

Need to go to woodland

Fear of forest

Need to learn forest school ethos

Forest School Ethos

Inclusion

Environmental protection

Behaviour needs

Emotional needs

Use of environment

Permission to use land

Class size

Pressures

Continuing professional development

Broad content in different class levels

Storms

DEIS inspections

Weather

CPD course

Clothing

427

N.2 Searching for Themes

Categories to Themes

Chronosystem

- Continuing professional development
- Weather

Macrosystem

- Nature based learning
- Challenges
- Culture
- Safe
- Culture
- Safety
- Use of environment
- Weather

Exosystem

- Nature based learning
- Safe
- Play

Microsystem (school)

- Learning
- Nature based learning
- Planning
- Methodologies
- Social
- Experience
- Inclusion
- Challenges
- Behaviour Management
- Safe
- Learn
- Organisation
- Inclusion
- Play
- Social
- Collaboration
- Planning
- Safety
- Need for collaboration
- Funding
- Inclusion
- Use of environment
- Continuing professional development
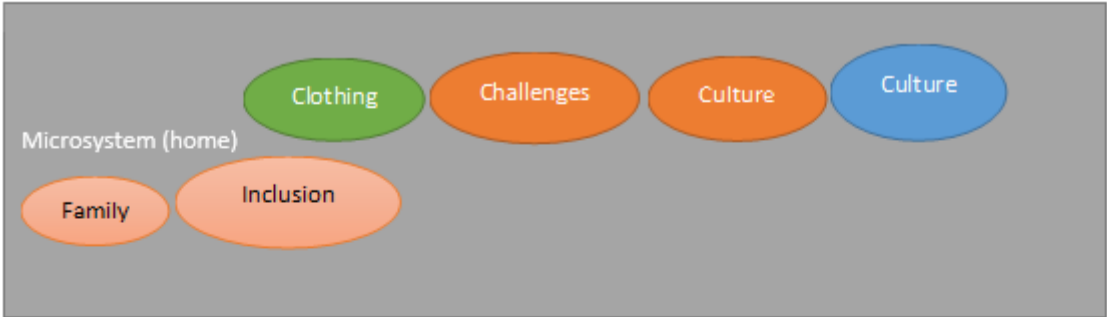
Appendix O

O.1 Outcomes of Nature Play

The Affordances of Nature for Children, adopted from Beigi (2021, p. 196)

Flat, relatively smooth surface	Relatively smooth slope	Graspable/detached object	Attached objects	Non-rigid, attached object
Affords walking, running Affords cycling, skating, skateboarding Affords skipping, playing hopscotch Affords playing	Affords coasting down Affords rolling, sliding, running down	Affords drawing, scratching Affords throwing Affords hammering, battling Affords spearing, skewering, digging, cutting Affords tearing, crumping, squashing Affords building of structures e.g. raw materials for construction Affords using plants in play Affords playing with animals	Affords sitting on Affords jumping on/over/down/from	Affords swinging on e.g., tree branch, poles
Climbable Features	**Aperture**	**Shelter**	**Mouldable material (e.g., dirt, sand, snow)**	**Water**
Affords exercise/mastery Affords looking out from Affords passage from one place to another e.g., stairs, ladder	Affords locomoting from one place to another Affords looking and listening into adjacent places	Affords microclimate Affords prospect/refuge Affords hiding Affords privacy Affords being in peace and quiet	Affords construction of objects Affords pouring Affords modification of its surface features e.g., sculpting	Affords splashing Affords pouring Affords floating objects Affords swimming, diving, boating, fishing Affords mixing with other materials to modify

O.2 The Ogham Tree Calendar
The Ogham Tree Calendar, adopted from MacCoitir (2018, pp. 185-199)

Time of Year	Tree	Significance
1st – 28th November	Yew	Leaves are dark and gloomy, but red berries give sign of hope. Represents a time of rest, reflection and meditation.
29th November – 26th December	Pine	Smell of pine symbolises freshness and new life, bringing the promise of renewal. Opportunities to decorate for Christmas.
27th December – 23rd January	Birch	Twigs used to celebrate St Bridget's Eve by making wands. Birch used to sweep and clean, it represents a time to begin new habits and act on resolutions.
24th January – 20th February	Rowan	A tree of energy and protection as berries symbolise fire. Rowan was used to protect the first milk of the year by placing it around the pail.
21st February – 20th March	Alder	Tree of strength and battle symbolised through its red sap. Traditionally used to make shields and is considered a tree of protection from harm. Used during times when people needed courage and strength to take first steps.
21st March – 17th April	Willow	Tree of growth and fertility, branches are used to make baskets and fences. Symbolises flexibility in an ever-changing world.
18th April – 15th May	Hawthorn	Tree of power, creativity and fertility. The may bush (hawthorn) is decorated during the festival of "Bealtaine" and placed on the doors and windows of the home. It is a time of excitement and new experiences, where fairies were believed to be active.
16th May – 12th June	Ash	Represents strength and confidence in the strong summer sun. Ash used for making spears and horsewhips for kings, signifying protection and supporting them in their marriage to the land. This tree grows fast and provides strong timber.

13th June – 10th July	Oak	A large tree, which was seen as the champion and protector of all within the forest. Bonfires are lit on St John's Eve to celebrate midsummer. It is a time of achievement as we look forward to the harvest and a time to make new patterns in life.
11th July- 7th August	Holly	Holly flowers in between prickly leaves, signify the land standing poised between Summer and Autumn.
8th August – 4th September	Hazel	Hazelnuts signify the fruits of the harvest. It is time to think of achievements and develop qualities of wisdom and good judgement and seek a deeper meaning to life.
5th September – 2nd October	Apple	Represents time to reflect upon lessons learned from lack of success or disappointment. Fruits of the harvest are available to restore energy and give new hope.
3rd October – 30th October	Elder	This is a tree of witchcraft and magic. Deep purple berries make a rich wine. Mysteries of "Samhain" approach. It is time to confront issues you feel uncomfortable with.

Activity	Description
I Notice, I Wonder, It Reminds Me Of	Students use a three-part system to enhance observation, curiosity, and creative thinking
My Secret Plant	Students choose a secret plant, observe it, and document it in their journal using pictures, words, and numbers. Then a partner tries to find their partner's plant using their journal entry.
Zoom In, Zoom Out	Students make a diagram of a natural phenomenon at life size, then "zoom in" to make a close-up of a feature and "zoom out" to make a diagram of the phenomenon in the context of its surrounds.
Timeline	Students observe and make diagrams of an organism at different stages, such as flowers from bud to fruit, mushrooms at different stages, or leaves of the same species at different stages of decomposition.
Soundscape Maps	Students find a place to sit quietly, then make a graph to show natural, human, and machine sounds, using lines of different lengths, shapes, and colours to show variation in the quality of sound.
Forest Karaoke	Students listen to birdsong, then make diagrams to show pitch, loudness, and quality of the song.
Species Account	Students focus on one species and record as many observations as they can using words, pictures, and numbers.