Learning during lockdown: did prior attendance at a Forest School programme alter children's home learning experiences, during the COVID-19 pandemic?

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Impact of COVID-19

The research outlined in this thesis was conducted during the COVID-19 pandemic (March 2020-May 2021) and was subsequently impacted by this in a number of ways.

Prior to the pandemic I (the researcher and author of the thesis) had initially carried out a literature review on the Forest School programme. From the review, I found several papers that had noted that Forest School supported children's learning, language and development. I felt however, that many of these captured data from perceptions, rather than learning data captured from the child directly. From this I felt it was hard to distinguish whether the child's learning and language development had changed, or whether it was only the adult's viewpoint of the child that had changed. I had initially planned to assess a sample of children with learning and language assessments, at the beginning of a Forest school programme (baseline) and then following six months' attendance at Forest School. I then wanted to compare these results to a sample of children (matched by demographics) who hadn't attended a Forest School, but who I had administered the same assessments to.

Due to the pandemic, this was not possible however, as Forest Schools were not operating at this time and so children's progress couldn't be tracked across the programme. I therefore had to look to how children progressed in the home learning environment. Capturing assessment data at one time point during the home learning period would arguably not have shown me the impact of Forest School. I therefore had to gather data on learning progress, through parental report of this time, within a survey. The survey aimed to focus on outcomes that could be quantified (such as number of hours learning) and that were hoped would be less impact by parent's preconceptions of Forest School. To explore whether Forest School impacted children in the home learning environment, beyond what would be expected in typical development, the survey also had a comparison group of parents whose child hadn't attended Forest School.

Although parental and child perceptions (the limitations of which has been discussed) it was also felt appropriate to add depth to the findings by interviewing children and parents alongside the survey. This then could also capture what both Forest School and the home learning period was like for parents and children (for example how or why this may have been or a difficult /easy time) more easily than survey data may have.

Thus, there were key factors relating to the COVID-19 pandemic that impacted the aims, methodology and procedure of the thesis.

Abstract

Forest School is a child-centred, regular, outdoor learning programme, that was developed in Scandinavia. The Forest School movement is being increasingly adopted by United Kingdom (UK) education settings, however at present there is limited rigorous evidence that has shown the efficacy of the approach. This research captured parent and child views on what they felt children learn from Forest School and whether they felt this learning generalised to the home learning environment, during the COVID-19 pandemic. It then explored whether there was a difference in children's' home learning behaviours, between those who had and hadn't participated in Forest School. A cross-sectional mixed methods research design was adopted and associations between Forest School and the presence of skills related to learning was explored. An online survey that investigated lockdown learning experiences was completed, comparing 44 parents whose children had participated in Forest School and 47 parents whose children had not. No significant differences were found between groups for any of the parental responses regarding learning behaviours. However, when the Forest School group was limited to those who had participated in Forest School for 6 months or more, a significant difference between groups was found, with the Forest School group spending more time learning independently. Interview data was also collected from five parents and five children, regarding children's home learning and Forest School experiences. Parents interviewed reported that Forest School brought a number of benefits to their child that they couldn't get in the classroom. Children interviewed reported Forest School brought them enjoyment and opportunities for learning. Children and parents interviewed reported largely positive home learning experiences, drawing some parallels with Forest School experiences, such as the importance of learning being outdoors and practical. Differences between the survey and interview findings were discussed along with implications for future Educational Psychology research and practice.

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Contents

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Glossary of terms

Abbreviation	Full term
ASD	Autism Spectrum Disorder
CINAHL	Cumulative Index to Nursing and Allied Health
COVID-19	Coronavirus
CASP	Critical Appraisal Programme
EP	Educational Psychologist
ERIC	Education Resources Information Center
EYFS	Early Years Foundation Stage
FSM	Free School Meals
LA	Local Authority
MMAT	Mixed Methods Appraisal tool
OSA	Office of the Schools Adjudicator
PIP	Performance Indicators in Primary School
SEN	Special Educational Needs
TA	Thematic Analysis
UK	United Kingdom

Introduction

1.1 Context and Background

This section will briefly discuss the background to home education during the COVID-19 pandemic and elective home education more generally, prior to the pandemic. It will then explore the background to outdoor learning approaches including one in detail: Forest School. The proposed benefits from Forest School will then be compared to more formal curriculum approaches. Finally, these topics will be drawn together to present the rationale for the proposed research.

1.2 Home education during the COVID-19 pandemic

The COVID-19 pandemic has been described as "creating the largest disruption of education systems in history", with closures of schools impacting around 94% of the world's student population (United Nations, 2020 p.2). The majority of children experienced a five-and-a-half-month break from face-to-face teaching, by the time schools reopened in September 2020. During the school closure period, schools looked to different ways to support education, from radio to television; to take home materials to video-call software. However, children and families access to these resources and engagement to remote learning, varied considerably during this time. Of particular concern was the overall low engagement rates with remote learning, of children who have identified special educational needs (SEN) and/or are eligible for Pupil Premium (Lucas et al., 2020). Of additional concern was teachers in schools with the most deprived intakes reporting a much higher percentage of their pupils didn't have access to electronic devices, that made remote learning more accessible, compared to those in the least deprived intakes (Cullinane & Montacute, 2020).

Andrew et al. (2020) explored what home learning during lockdown and the school closure period, looked like in practice. Five thousand five hundred parents, with one or more children aged 4-15, were interviewed about how they and their children spent their weekday during lockdown. The authors report that survey participants were from a mix of regions and socio-economic backgrounds and were a mix of genders. Time-use data during the period was compared to data collected in the 2014-2015 UK Time-use survey. Both primary and secondary school students were found to spend an average of 4.5 hours a day on home learning, a 25%-30% reduction in learning time from that spent prior to the pandemic. In addition, primary school children from wealthier families spent around four-and-a-half hours more per week on learning than those from the poorest families. Outside of online classes, primary school children sampled spent an average 1.6 hours on schoolwork (although again there was much variation captured within this average figure). Time spent outdoors in lockdown was not found to have decreased in the sample, with primary school children spending more time outside than secondary school children as a whole. Just over a fifth of primary school children had no dedicated study space during this time and around a third shared a study space.

Similar to Andrew et al. (2020), Eivers et al. (2020) found that in April 2020 pupils from higher-income households spent more time on schoolwork, than those from lower-income households. For example, 39% of the secondary school pupils surveyed from the highest income families spent 4 or more hours a day on schoolwork compared to 25% of the lowest income families. Furthermore, pupils with more educated parents, particularly those in secondary school, were also found to have spent more time on remote learning activities, compared to those whose parents had GCSES's or no qualifications. The study also found that parents from lower-income backgrounds spent more time supporting their children's

schoolwork, which means correspondingly, that children from higher income families were likely to have spent more time learning independently. This may have been at least in part, due to a higher proportion of parents from low-income families being furloughed during this time. Where parents were still working and not furloughed, parents reported having to change their work schedules in order to balance childcare and to support their child's home learning during this time (Office for National Statistics, 2020).

During this period, children and families were confined to much smaller spaces to learn and in some instances quarantined. Quarantine is the separation and restriction of movement of individuals, who may have been exposed to the outcome of concern (Centers for Disease Control and Prevention, n.d.). Having to quarantine could arguably have added more stressors for families to contend with during the home learning period. Brooks et al. (2020) carried out a rapid review of the evidence base around the psychological impact of quarantine. The authors found that stressors came from: the duration of quarantine, fear of infection, inadequate supplies, inadequate information and frustration and boredom. It is important to consider the psychological impact of these stressors and how quarantine may have impacted children's ability to learn at home, as well as how it may have impacted children's learning when they returned to school.

1.3 Home Learning/Elective Home Education

Before the COVID-19 pandemic, approximately 55,499 children were educated at home in what is termed elective home education (Figure taken July 2019) (Personal Correspondence Education Otherwise, October 23, 2020). Similar figures were reported by the House of Commons of 52, 770, in 2018 (Home Education in England, 2019). The 2018 figures were

gathered from Local Authority (LA) survey responses to the Office of the Schools Adjudicator (OSA), although the OSA acknowledged this is likely to be an under-estimate. The Elective Home Education: Departmental guidance report for parents, states:

"2.11: There are no legal requirements for you as parents educating a child at home to do any of the following: teach the national curriculum…(or).. give formal lessons" (Department for Education, 2019, p.8).

The guidance also notes that "There is no legislation that deals with home education as a specific approach". (Department for Education, 2019, p.6)

However, Section 7 of the Education Act (1996) states that "*The parent of every child of compulsory school age shall cause him to receive efficient full-time education suitable- a:) to his age, ability and aptitude and b.) to any special educational needs he may have, either by regular attendance at school or otherwise" (p.6).*

Elective Home Education, during 'typical' circumstances, is of course very different from home education during a pandemic. Parents in the former are more likely to have had a greater feeling of choice and control over the decision to home educate than in the latter. However, it is acknowledged this is not always the case and some parents may feel forced into educating their child at home (Morton, 2010). Some research suggests that home education under non-pandemic circumstances can in fact have beneficial effects on children's learning and may suggest why some parents choose this alternative (Ray, 2013). However, it is difficult to reliably report on the findings of home education research. Much of the debate about its impact and efficacy is filled with political rhetoric and ideology around what

education should be (Jones, 2013;Davies, 2015) and is very polarised. For example, some suggest we should not home educate due to an inability to effectively monitor safeguarding risks (Balls, 2010), but others suggest it is a highly preferable approach for family wellbeing and children's educational outcomes (Ray, 2013).

Research into the benefits of elective home education suggests that children who are educated at home are more likely to feel autonomous and competent in their abilities, compared to those who have accessed learning in a traditional school setting (Riley, 2015). In a study by Jones (2013), children also felt they had more choice in what they were able to learn, and because of this showed greater enthusiasm and engagement in learning. Evidence suggests that not feeling autonomous in one's own learning can lead to lower achievement (Vansteenkiste et al., 2004). Indeed, many families have aimed for their home learning to be more autonomous, more informal and child-led in their facilitation, because of these perceived benefits (Jones, 2013).

One of the first UK studies that featured a large sample of home educated children and their families was carried out by Rothermel (2002, 2004). The study surveyed 419 families that had chosen to home educate their children and also assessed a sample of these children, on their psychosocial and academic development. Thirty-five children aged 4-5 were assessed, when they would have been due to start Reception, through parental responses to the Performance Indicators in Primary Schools baseline assessment (PIPs). The author noted that the sample scored higher on the PIPs than would be expected, when compared to a national sample. Yet, at what would have been the end of the Reception Year, the children had made less progress on the PIPs than that associated with children who had been in school. The author argued this was due to the sample's higher scores in the first instance, but no further

analysis of this was reported. Rothermel (2002,2004) also collected data from the Strengths and Difficulties Questionnaire (Goodman, 1997a, 1997b) from 44 parents and 7 children Interestingly, the scale reported many of the home educated children as having peer problems, as it asked parents whether children preferred the company of other children, preferred to play in groups and would want to share with other children: characteristics and skills that would benefit them greatly in a classroom environment but not necessarily in a home learning environment. Alongside the PIPs and Strengths and Difficulties Questionnaire data,100 families were interviewed on their experiences. Interview respondents noted that home educating made it easier for them to adapt to child-centred learning and adjust to a learning approach that suited their child. The research highlights some of the complexities and nuances that exist when capturing data on home learning and how important it is to look at the context and individual circumstances when doing so, as well as the overall picture.

Jones (2013) explored children's experiences of home education; nine children were chosen in the study sample, aged between 7-14 years. In the interviews, the children revealed a sense of ownership over their learning and felt that they were central and active in determining their education. They perceived themselves to have a helpful balance of choice and adult direction in their learning and because of this showed motivation, engagement and enthusiasm towards learning. The children in this sample also reported a sense of support and encouragement from their family members for learning.

Although little research has been done on the academic long-term outcomes of children who have been home schooled in the UK, in the United States some research has emerged. Yu et al., (2016), compared home schooled and traditional students' academic outcomes in their first year of university (732 students in each group). Students were matched on

socioeconomic status, gender, ethnicity and postsecondary institution. When these factors were taken into account, no differences were found between groups in their grade point average score. Although not highlighted as being more beneficial than the traditional education system, this study does provide evidence to suggest that elective home education may not be as concerning a choice for families, as some authors have previously suggested. Therefore, although each parents' experience of elective home education may be different, research suggests that many parents feel the approach helps children feel autonomous in their learning and to have the opportunity for greater choice over what they are to learn. This is in contrast to an approach that aims for adults to direct children's learning experiences and control the environment around them, that may be seen in more typical classroom settings. Although very different in format from elective home education, outdoor learning has also often been associated with a child directed approach and a greater degree of freedom in learning. Outdoor learning and its ability to be child-centred will now be explored.

1.4 Outdoor Learning and Open-air schooling

The COVID-19 pandemic is not the first time that health concerns have influenced the location that children access education. In the 1900s, open-air schools were created to treat children with Tuberculosis and provide for their health needs, whilst also meeting their educational needs (Fesler, 2000). Some of these schools, such as those started by the McMillan sisters, were play-based, child-centred and aimed to provide education and support in a way that was not offered by society at the time (Cree & McCree, 2012). The sisters emphasised the importance of a holistic approach, stressing the importance of movement and emotional wellbeing, alongside education. The sisters aimed for these schools to provide support for the most disadvantaged children in society at the time, particularly those in inner city areas (Liebovich, 2018). The use of these schools declined, however, as improvements in

nutrition and healthcare meant that fewer children were showing the symptoms for which these schools had been designed (Duckworth, 2005). Reports of academic outcomes were also inconsistent and so the schools were closed between 1938-1941 (Fesler, 2000).

1.5 Outdoor Learning in the Forest- The History of Forest School

As with open-air schooling, holding educational activities in the outdoors, such as in woodlands and forest areas, is by no means a new concept and has been taking place since at least the 1700s (Cree & McCree, 2012). Although with an arguably different framework, outdoor learning in the Forest has been particularly associated with Scandinavia and the concept of 'udeskole', which translates as 'outdoor school' from Danish (Waite et al., 2016).

Forest School can be noted to have influences from a number of different movements. One of the first of these with a similar ethos within the UK, emerged in the 1920s as a response to the perceived militarism of the outdoor education movement provided by the Scouts (created in 1907) (Cree & McCree, 2012). The movement was termed 'Woodcraft' and in these lessons, which took place in woodland huts, children were considered equal to adults. Curriculum projects were based around freedom, self-expression and meaningful activity (Shields, 2010)

A focus on child-led education, as central to the Woodcraft movement, was also highlighted in the government commissioned Plowden Report, of the 1960's. The report highlighted the importance of play, using the outdoors and learning by discovery, all things argued to be present in current day Forest School (Cree & McCree, 2012).

Later, in the 1970s, environmental education emerged. This approach also emphasised the importance of both child-led education and for children to interact with the environment around them. Yet during the 1980s and 1990s child-led approaches that focused on play began to diminish, as society and educational policy moved towards more adult-led education and named that "The school curriculum is at the heart of education" (The School Curriculum, 1981, p.1) . Environmental education was added as a cross-curricular theme to the new national curriculum in 1988-1990 (Chatzifotiou, 2006) with Outdoor and Adventurous Activities also added, but within Physical Education and not as a theme in its own right (Webber & Hardwell, 2019). However, environmental education and outdoor learning arguably took a backseat during this time, as English, Maths and Science took precedence (Wyse et al., 2008).

1.6. Forest School in the Present day

The Forest School Association reports that Forest School was first brought to the UK from Denmark by nursery staff from Bridgwater College in Somerset, in 1993. A number of other outdoor and Early Years educators, frustrated with the educational landscape at the time, subsequently began to adopt the approach. In 2000, Forest School was then taken up by a number of LAs who worked with local colleges to deliver training to adults, who would become Forest School practitioners (Forest School Association, n.d.). Although Forest School exists in a number of countries outside of the UK, such as in Scandinavia, this research will focus solely on UK based Forest Schools. All learning and education systems take place in a societal context and Scandinavian countries, where societal and educational expectations are more centred towards being outdoors (Knight, 2013), result in a context that is very different from the UK and thereby not comparable (Waite et al., 2016).

One of the motivations for the emergence of Forest School, as was the case for Open-Air schooling, was the perceived benefit to children's health. Many have expressed concern that children, as well as not being physically active enough, do not spend enough time outside. This growing gap between nature and human beings has been termed Nature Deficit Disorder. Some authors propose that Forest School is a useful way to overcome or reduce the effects of this, whilst also building educational skills (Louv, 2005;Turtle et al., 2015).

Forest School is a specific form of outdoor learning that can be distinguished from other outdoor learning initiatives. Whereas other outdoor learning programmes can be more governed by standardised curriculum goals, Forest School is predominately child-led, with a negotiated curriculum between both children and adult facilitators (Barrable & Arvanitis, 2019). It is seen as a vehicle for curriculum and not a curriculum in itself (Maynard, 2007b). It aims to increase children's connections with nature (Davis & Waite, 2005) and increase children's motivation to learn by providing them with more stimulating experiences (Harris, 2017).

The Forest School Association defines Forest School as "A child-centred inspirational learning process, that offers opportunities for holistic growth through regular sessions. It is a long-term program that supports play, exploration and supported risk taking. It develops confidence and self-esteem through learner inspired, hands-on experiences in a natural setting" (Forest School Association, n.d.).

The Forest School Association, following consultation with its members also outlines six principles of good practice for Forest School in the UK:

1.) “Forest School is a long-term process with frequent and regular sessions in a woodland or natural wooded environment rather than a one-off visit. Planning, adaptation, observations and reviewing 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 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.”

(Forest School Association, n.d.)

1.6.1 *Theoretical underpinnings to Forest School*

Forest School is not solely linked to one theoretical approach, with a number of papers in the literature failing to reference any theoretical standpoint at all (Leather, 2012b). However, a number of theories have been applied to Forest School and the most prominent of these will now be discussed (Knight, 2018).

Although not a single unified theory, constructivism is often linked to Forest School (Harris, 2017; Knight, 2018). Elliott et al. (2000) define constructivism as: “An approach to learning that holds that people actively construct or make their own knowledge and that reality is

determined by the experiences of the learner" (p.256). It focuses on what students take with them from the classroom, rather than the activity of the classroom (Hiebert et al., 1996). This is particularly important in the remit of this study, when we consider what learners may be taking from the classroom into the home learning process, during lockdown.

Underpinning this is the work of Piaget and his ideas on cognitive constructivism. Piaget saw learning as the result of the child interacting with the world and constructing new, or reorganising existing, knowledge structures (Packer & Goicoechea, 2000). However, unlike the definition from Elliott et al. (2000), Piaget considered the child fundamentally unchanged by the construction of this knowledge; he proposed that a child's capacity to learn is dependent on which stage of cognitive development the individual child is currently in (Piaget, 1970).

Vygotsky (1978) and sociocultural theory has also been linked to Forest School (Leather, 2012a). Vygotsky, unlike Piaget, believed that learning did not depend on which stage of development a child was at, but that personal and social experiences could not be separated. He believed learning and knowledge to be shared between individuals, with learning being a social, not an individual event. He also placed a large focus on language as the critical link between the social and the psychological. Language interactions with other children and adults were seen as critical in cementing children's learning of concepts (Berk & Winsler, 1995; Leather, 2012a). Adams (2006) also highlighted Vygotsky's ideas and suggests that for a constructivist pedagogy, the education must focus on the learning process and not the performance. The author also notes that such an approach should establish a teacher-pupil relationship based on guidance, not instruction, and promote assessment as an active process

of uncovering and acknowledging shared understanding. These principles underpin many Forest Schools in the UK at present.

Because Forest School involves making meaning by doing and having experiences, Forest School has also been linked to Experiential Learning theory (Ord & Leather, 2011), through theorists such as Dewey (1997, 2007) and Kolb (1984). Some authors highlight the framework of 'Do-Review-Plan', as a 3-stage experiential learning cycle based on Kolb, (1984), that can be used in Forest School (Coates & Pimlott-Wilson, 2019). However, other authors feel that these concepts are too simplistic to truly conceptualize outdoor learning (Brown, 2009). Ord and Leather (2011) propose that Dewey (Dewey, 1997, 2007) is a more helpful model to apply to outdoor learning and Forest School. Dewey acknowledged the amalgamation of previous experiences that a child brings to their present experience, rather than just what exists in that present moment. The number of these previous experiences (e.g., a child's previous experience of learning or the woodland setting) and the meaning a child attaches to them, will influence the quality of the present experience.

Finally, Kellert (2002) proposed a conceptual model for children experiencing nature, rather than a theoretical model of learning per se. The author outlines how experience and contact with nature impacts children's and adolescents' affective, cognitive and evaluative (values related), development. Kellert (2002) outlines affective development as the emergence of emotional and feeling capacities, cognitive as the formation of thinking and problem-solving skills, and evaluative as the creation of beliefs and moral perspectives. He proposes that children can be impacted by nature directly such as through Forest School, indirectly such as through a visit to a zoo, and vicariously through media. The author states that nature can provide extensive opportunities for children to develop and acquire abilities through a wide

range of observable objects, features and behaviours that create stimulating and memorable learning contexts and this has been observed in the research.

1.6.2 *Benefits of Forest School*

This section will briefly outline some of the key benefits of Forest School which have been proposed from the research. These benefits and studies will be explored and critiqued in greater detail in the next section, the Literature Review.

One proposed benefit of Forest School is that it provides children with more stimulating experiences, that they will then be motivated to write and speak about, thereby providing them with opportunities to develop their language and communication skills. Butwright et al., (2007) aimed to improve the literacy and Information and Communications Technology skills of Year 3 children by providing pupils with a morning of Forest School, that they then were required to discuss in groups and write about, on paper and on a computer. School staff, and the children themselves, reported an increased desire for participants to engage with one another, as well as with the resources, to discuss the experience. However, no follow up or achievement measures were taken, so we do not know whether this impact was long term. Similar results were also found in children's capacity to write poetry, when students were provided with direct contact to natural spaces and supported by adults (Gardner & Kuzich, 2018).

McCree et al. (2018) tracked the emotional and academic outcomes of children aged 5-7 over three years. They found that, compared to their peers (matched for Free School Meal and Pupil premium numbers), those who had participated in a Forest School made better progress

in reading, writing and math's. The children's self-regulation and resilience were also noted to have developed.

Tiplady (2018) also used Forest School to support the emotional wellbeing of children who were unable to participate in mainstream education because of social, emotional, and mental health needs. At the beginning of Forest School, the pupils largely found social interaction difficult, with pupils participating in individual activities largely supported by an adult. Through observational data and parent and teacher interviews, the authors report that adult support was withdrawn as the year went on. The pupils were observed increasingly interacting with one another, developing skills in communication and negotiation and enjoying their time with one another.

Outside of the UK, Ulset et al. (2017) found that time spent outdoors during pre-school, increased children's ability to attend to stimuli and learning, as well as their working memory capacity, over a 4 year period. The authors found significant differences, even after controlling for socioeconomic status of the family and parental education levels. The authors considered attention restoration theory, where nature allows neural inhibitory mechanisms to rest and recover from use (Berman et al., 2008), as a possible underlying causal mechanism for this.

Coates and Pimlott-Wilson (2019) also found that the change in adult and child expectations of learning in Forest School, compared to the classroom, helped children feel a sense of autonomy and choice in learning and a feeling of being free, active and refreshed from being outside. Because of this, children felt challenged but appreciated the opportunity to develop their independence and self-confidence. It also gave them the opportunity to negotiate risk

and navigate a new physical environment. From these practical learning opportunities, children showed a greater awareness and appreciation of the natural world around them.

Finally, a wealth of research has also highlighted the enjoyment children have experienced whilst participating in Forest School (O'Brien & Murray, 2006; Ridgers et al., 2012; Bradley & Male, 2017). However, it is acknowledged in some of these studies that this may be, at least in part, due to the novelty of the experience.

1.7 Current Research

Home learning during the pandemic presented all families with a number of challenging circumstances, from finding resources to learn (Cullinane & Montacute, 2020), finding the space to learn (Andrew et al., 2020) and juggling childcare and employment (Office for National Statistics, 2020). Some children, particularly those from lower socioeconomic backgrounds, faced a greater number of challenges and therefore home learning experiences were not equal during this time (Lucas et al., 2020). Research proposes that Forest School and outdoor learning assists children with self-regulation (McCree et al., 2018), social interaction (Tiplady, 2018), attentional skills (Ulset et al.,2017) and gives children an excitement for learning, teaching them how to learn outdoors (O'Brien and Murray, 2006). These are likely to have been key skills that could have potentially assisted children and families during this period, particularly if they were one of the families facing more challenges.

With a number of education institutions looking at increases in online learning rather than face-to-face learning and the possibility of further school closures at the time of writing (Fleming, 2021), any approaches that may assist families must be explored. This research

sought to explore whether Forest School was able to be a buffer to challenges to children's learning during this unique time.

Literature Review

Introduction to Literature Review

A number of key benefits have been proposed for children participating in Forest School. However, much of this research has limitations, often being published in the form of evaluative reports, rather than peer reviewed journals (e.g. O'Brien & Murray, 2006) and often without a clear outline of methodology. Some authors argue much of the research also includes examples of 'Forest School', that have moved away from the pedagogy that is intended to underpin it (Leather, 2018). This systematic literature review aimed to gather an up-to-date evidence base of what methodologically rigorous Forest School research is available. It then looked to explore what benefits have been found for children participating in Forest School. In particular:

- How does attendance at a Forest School influence and benefit children's learning?

2.1 Search Strategy

As Forest School spans a diverse range of movements/disciplines (Cree & McCree, 2012) a number of databases from different disciplines were searched, in order to provide a comprehensive review. The following databases that were available at the author's institution were searched through the platform EBSCOhost:

- APA PsycInfo
- APA PsycArticles

- Psychology and Behavioral Sciences Collection
- Education Source
- ERIC
- SocINDEX
- MEDLINE
- CINAHL
- Google Scholar

The broad search string of: **"**Forest school OR forest education OR woodland school OR woodland education" was searched, within the titles of articles only. [1] In addition to multiple database searches, reference lists of identified articles were also searched through the strategies snowballing and reverse snowballing (Sayers, 2007). Journals key to UK Educational Psychology practice were also hand searched. Those identified were: Educational and Child Psychology, British Journal of Educational Psychology and Educational Psychology in Practice. Abstracts were first scanned for relevance to the topic of children in UK Forest Schools. Initial searches were carried out in Autumn and Winter 2020 with an identical search carried out in Spring 2021 finding no additional papers.

Searches were limited to UK literature, as programmes outside of the UK may be different in structure and ethos and therefore more difficult to compare (The Forest School Association is a UK organisation). Children outside of the UK may also experience different cultural traditions regarding the outdoors making unpicking the influence of Forest School more difficult (Waite et al., 2016).

[1] When the search was broadened to key words (rather than a search within title) this compiled a number of papers not relevant to UK Forest Schools

2.2 Selection of Articles

2.2.1 Inclusion Criteria

1.) Published in the English Language

2.) Included reference to a UK based Forest School in order to increase the likelihood of a conceptually similar programme for comparison in the review.

3.) Published between 2000-2020 in order to ensure an up-to-date evidence base

4.) Published in a peer reviewed journal to ensure methodological rigour

5.) Recipients of Forest School were under 18 years

6.) Included empirical data

2.2.2 Exclusion Criteria

1.) Reported duplicate data/no additional analysis

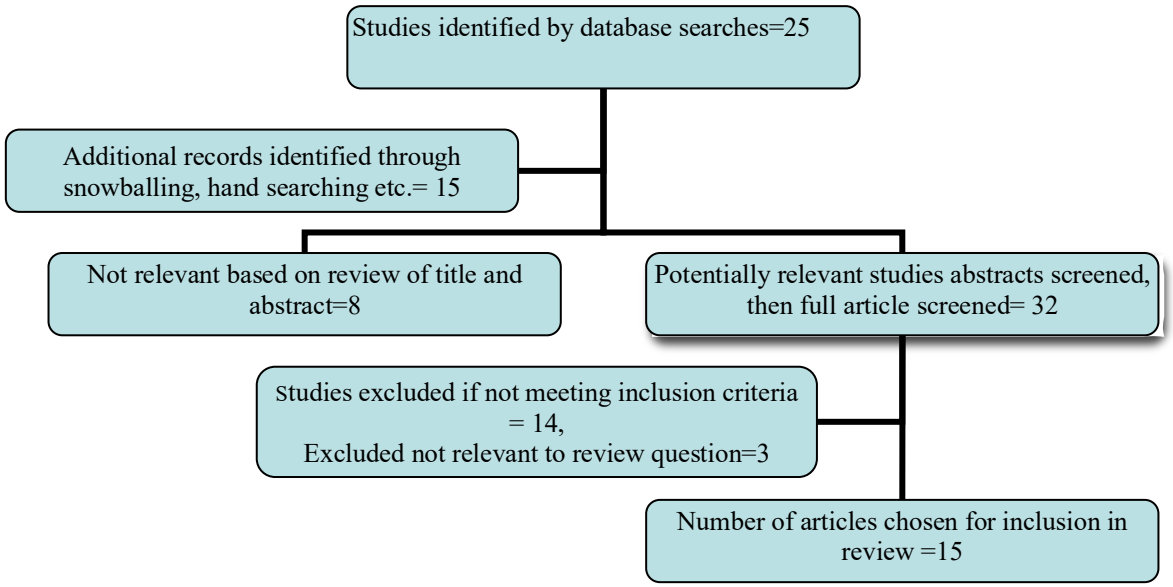
2.) Reviewed the theory or concept of Forest School

3.) A definition or description of Forest School was not listed

4.) Methodology not clearly detailed

5.) Secondary review of data (e.g. book review, duplicate reflection on data reviewed elsewhere)

Figure 1
Flowchart of searches



A total of 15 papers were thereby included in the review. For further details of the inclusion process, readers are referred to the appendix.

2.3 Methodological review

As well as an up-to-date synthesis of the research available, it is clear a methodological review of that research is also warranted. As reviewers' judgments can vary greatly, critical appraisal tools have therefore been developed to help appraise study quality in a more consistent, transparent and reproducible way (Petticrew & Roberts, 2006).

In order to do this, the author used the Critical Apprisal Skills Programme (2018) (CASP) Qualitative Checklist Review tool, as recommended by the Cochrane Collaboration Qualitative and Implementation Methods Group (Higgins et al., 2021). The Mixed Methods Appraisal tool (Hong et al., 2018) (MMAT), that has also been recommended by the Cochrane Collaboration (Pluye et al., 2011), was also used. Although the MMAT was originally designed to appraise studies within systematic reviews, it was deemed a useful and appropriate tool that enabled a review of the quantitative data set, qualitative data set and

mixed methods set of the mixed methods studies that were extracted. No solely quantitative studies were extracted from the search. For further details of the review tools and an example of the review process, readers are referred to the appendix.

2.3.1 Qualitative data

Table 1 Interview primary data collection.

Study	Participant Group	Data Collection Method	Critique of methodology	Key Findings	Why Forest school makes this impact (as proposed by authors)	Value of research
Coates, J. K., & Pimlott-Wilson, H. (2019). Learning while playing: Children's Forest School experiences in the UK. *British Educational Research Journal*, *45*(1), 21–40	18 children 8-9 years; 15 children 4-5 years. Two primary schools (N=33).	Semi structured interview children and participatory activities (e.g. word association and photographs).	Method chosen appropriate. Clear how participants selected. Ethical issues not discussed though reported cleared by committee. Findings explicit but not researchers' role (although 2 researchers not involved in FS project). Data not triangulated, i.e. only child data.	Data gathered from children suggested Forest school gave them a break from routine, a chance to learn through play and a chance to work with others.	Forest School creates memorable learning experiences that the restrictive curriculum can't; children could learn through play and enjoy the experience too. Changed adult expectations meant increased autonomy and connection with peers; children learned together in groups. Children felt refreshed and free from school pressure (thereby could be more likely to learn).	Discussed how Forest School learning and learning in classroom can be linked for mainstream primary children and possible benefits.
Harris, F. (2017). The nature of learning at forest school: Practitioners' perspectives.	20 Forest School Practitioners who worked with primary	Semi-structured interview.	Only practitioners who were fully qualified and had experience of leading more	Practitioners saw Forest School as helping children with social development (relationship with others, teamwork,	Proposed children build relationships and social skills because adults encourage them to take turns in Forest School. More opportunity to	Useful in summarising large sample of FS practitioners, however, as

Education 3-13, *45*(2), 272–291.	school children.		than 40 sessions chosen. Method chosen appropriate for perspective and also asked about criticisms of Forest School. Ethical issues not discussed, data analysis process not discussed, credibility of findings not discussed.	self-knowledge, learning to take risks). Forest School also led to engagement with nature and an attachment to place (the woodland area).	work in groups than classroom also means communication skills build. Gives them chance to experience success and build confidence by short achievable tasks, especially if haven't experienced this in typical classroom environment Forest School leaders encourage reflection about risk and challenge children in activities Nature education- chance for practical learning helps children to be engaged with it.	practitioners may have bias.
Bradley, K., & Male,D.(2017).'Forest School is muddy and I like it': Perspectives of young children with autism spectrum disorders, their parents and educational	Four children 6-8 years; Three mothers; Two Teaching Assistants.	Semi-Structured Interview parents; multi-method interviews for children	Method chosen appropriate. Not clear how participants selected. Ethical issues, data analysis and statement of	Common themes which generated were learning outcomes and the benefits of engaging in challenge and risk-taking. Additional common themes were experiencing success	Parent and children tended to discuss benefits rather than how Forest School may have led to these. However, from article (particularly practitioner data): sense	May help for approaches for ASD more than evidence for or against FS. Small sample.

professionals. *Educational and Child Psychology*, *34*, 80–96.			findings discussed.	(parents/professionals) and the opportunity to make friends (children)	of freedom from being in larger space. Physical health from being more active than classroom. Learn more because less bored outside; more stimulation in environment Child-directed means children think they are following their own agenda and therefore more likely to stay engaged, experience success and persevere with challenges.	
Elliott, H. (2015). Forest School in an inner city? Making the impossible possible. *Education 3 13*, *43*(6), 722–730.	18 staff, 77 parents from school. Forest School carried out with one Early Years Foundation Stage year group and then asking whether	Unstructured interviews school staff. Questionnaire parents and school staff.	Method of data collection could be appropriate but not discussed why chosen, or how structured. Relationship between researcher and participants not discussed. No ethics discussion, little	Staff and parents perceived Forest School to support social skills, confidence, life skills, creative skills, improved behaviour and opportunity to study nature. Staff saw ethos of Forest school as discovering, learning and taking risks	The outdoor environment stimulates learning. Nothing further discussed in article.	Paper states can't be transferred to other areas as case study approach. Only highlights changes to the school itself and doesn't generalise further to other schools.

	should extend.		data analysis, little triangulation of findings.	outdoors whatever the weather.		Methodology limited.
Ridgers, N. D., Knowles, Z. R., & Sayers, J. (2012). Encouraging play in the natural environment: A child-focused case study of Forest School. *Children's Geographies*, *10*(1), 49–65.	17 children one school (Six boys, eleven girls 6-7 years)	Focus group before and after 12-week forest school.	Method clear. Analysis clear, number of researchers to check data, not necessarily triangulation as only data from children.	Children's definition of play changed following attendance at Forest School. Now included exercise, interacting with the environment and using your imagination. Authors felt children discussed examples of social skills development, confidence when interacting with natural world, understanding of nature, interest in nature, motor skills, leadership skills and connection with natural world when discussing Forest School experiences.	Forest school gave more opportunities for play in different groups so more opportunities to practice social skills Nature knowledge - opportunity for new discovery helped aid their understanding, regular contact helped build connection. Natural environment provides more opportunity to challenge and experience risk.	Results very useful for children's perceptions, however quite small sample. As around play, links to learning and causality may be harder to unpick.
Maynard, T. (2007a). Encounters with Forest School and Foucault: A risky	Two Early Years Foundation Stage	Semi-structured interviews at beginning	Method chosen appropriate Role of	Teachers and Practitioners had very different approaches to working with	Autonomy from less adult involvement More likely to learn how to manage risk as	Shows how schools may find Forest School difficult

business? *Education 3-13*, *35*(4), 379–391	Teachers, Two Forest School practitioners.	and end of programme.	researcher considered. Ethical issues not discussed, clear how data analysis carried out but not whether more than one analyser (may just be author). Results didn't seem to refer to benefits of Forest School on children as stated would in aims.	children (when to intervene) and this caused some tension between them. Teachers felt they were constrained by national curriculum and parents and children being free was too risky. After working with Forest School practitioner's, they began to embrace a more positive view of risk taking.	Forest School leaders thought it was important for them to experience it (compared to teachers).	to add in (ethos). However, doesn't discuss whether this would happen in all Forest Schools, nor the benefit of Forest School as stated it would (listed elsewhere?).
Maynard, T. (2007b). Forest Schools in Great Britain: An Initial Exploration. *Contemporary Issues in Early Childhood*, *8*(4), 320–331	Three Forest School Practitioners.	Semi-structured interviews	Method chosen appropriate but doesn't note time period of interviews. Role of researcher considered. Ethical issues not discussed, clear how data analysis carried out but not whether more	Practitioners felt primary aim of Forest School was to develop children's self-esteem, self-confidence and independence skills. They also felt it provided the opportunity to learn to take risks, play in the natural environment and learn through a hands-on approach.	Risk management developed as greater exposure to activities that involve risk. Higher adult to child ratio than classroom meant this was possible. Self-esteem and self-confidence were raised as children were given small achievable tasks so experienced success.	Commonalities in what they feel are benefits but can't show that these benefits have occurred (cause and effect).

			than one analyser.		Children learned problem solving skills as given time to reflect and questioning by Forest School practitioners helps them unpick what to do next. Learning is more meaningful as embedded in real life practical activity and therefore more easily recalled.	

Six of the included studies collected qualitative data and used interviews as their main method of data collection; five of these were noted as semi-structured interviews and one appeared to use an unstructured interview approach (Elliott, 2015). One study, Ridgers et al. (2012), used semi-structured focus groups, with two to three children in each one, before and after a 12-week Forest School. As this was also to capture children's perceptions and was the only study to use this as its main methodology, this was included in this section.

Coates and Pimlott-Wilson (2019) and Bradley and Male (2017), looked at children's experiences of Forest School with children directly. Ridgers et al. (2012) also looked at children's experience of Forest School, along with children's experience of play in the natural environment more broadly. This is important, not only in the fact that children are the direct recipients of the Forest School programme but also in the legislative importance of ensuring that children's voices are heard in educational research (The United Nations Convention on the Rights of the Child, 1989; Children and Families Act, 2014).

Five studies looked at adult perceptions of children's learning at Forest School (Elliott, 2015; Maynard, 2007a, 2007b). These were from the perspectives of Forest School practitioners (Maynard, 2007a; Maynard, 2007b, Harris,2017), parents (Bradley & Male, 2017) and school staff (Bradley & Male, 2017). Elliott (2015) also sent out a questionnaire to parents and staff within the school. For all studies the method of data collection appeared appropriate for the aims of the research, thereby increasing their validity. Forest School practitioners appeared to elicit some of the richest qualitative data in the studies. This may have been due to the fact they are present in the sessions themselves. However, it should also be acknowledged that their views may be subject to bias and may over-emphasize the benefits of Forest School, as they are paid practitioners who depend on the programme for their income.

In a number of studies, participants were recruited by purposeful sampling to fit key criteria and in some cases it was not clear how participants were recruited (e.g. Bradley & Male, 2017). Purposive sampling is of course to be expected in real world research, but when gathering perspectives, rather than other types of data, it must be considered that those who may respond to requests for interviews are more likely to be interested in the topic of Forest School, and may not be representative of the overall population (Costigan & Cox, 2001); Robinson, 2014). For example, in Coates and Pimlott-Wilson (2019), participants were recruited from two primary schools by a letter sent out to parents; those that responded to this may have been particularly interested in the topic. A similar approach was taken in Ridgers et al.(2012). In Coates and Pimlott-Wilson (2019), it was also not clear how researchers selected the schools that were chosen to be part of the sample. However, as the schools were from two demographically different populations, a more variable and representative sample was possible. Elliott (2015) sent out a questionnaire to all staff and parents within one school. Although this could have resulted in a response bias, a number of staff reported they knew little about Forest School, suggesting this would be less likely. It is difficult to ascertain whether the sampling bias was also lower for parents who largely reported positive things about Forest School.

Other studies took a case study approach and thereby aimed to recruit all those of a particular group involved in a Forest School project (Maynard, 2007a, 2007b ;Bradley & Male, 2017). With these particular designs, all children, parents and staff involved in the Forest School may have been included in the sample, thereby reducing selection bias (rather than certain individuals volunteering). However, a case study can mean that the sample isn't representative of the general population, or of other Forest School provisions. For example,

Bradley and Male (2017) looked at the perspectives of children with Autism Spectrum Disorder (ASD) and Maynard (2007a, 2007b) looked at the perspectives of school staff and practitioners; both had small samples, with findings arguably specific to their contexts. These studies often didn't intend for their findings to be generalised outside of the included setting, however, when much of the research takes this approach, it can make it difficult to explore the overall impact of Forest School and its utility and effectiveness for all.

Harris (2017) did not adopt a case study approach and also ensured that Forest School practitioners interviewed were fully qualified, had led over 40 sessions, and were asked about some of the difficulties of Forest School. However, as discussed, gathering the views of practitioners can bring with it its own challenges. In Elliott (2015), the relationship between the researcher and the participants may also have been subject to bias, with the researcher being linked to the running of the Forest School. It appears this was not the case, with researchers instead being external to the project for Coates and Pimlott-Wilson (2019), Maynard, (2007a, 2007b) and Harris (2017), although this was not fully disclosed in the articles. Bradley and Male (2017) included one external researcher and the school's inclusion lead, which appeared to be very suitable for the particular study sample, who may have become anxious when sharing their views with someone they were not familiar with.

Analysis of data is another key area that needs to be explored when examining the papers. It was unclear whether the data analysis of both Maynard studies that used the same data (Maynard, 2007a, 2007b), was sufficiently rigorous. Maynard (2007a) was clear in the method it used to analyse the data (Foucauldian), but not in how data were selected for presentation in the article, or whether data against the author's argument were considered. Coates and Pimlott-Wilson (2019) and Bradley and Male (2017) were transparent in their analysis method, discussing how they followed the analysis process and ensuring consistency in coding between each author, thereby increasing the reliability of the studies (Leung, 2015).

When this process is not as clear, it is possible that another researcher looking at the data, may get different results and the data may be more subject to error. The authors also presented data for their findings by a number of different children, meaning that it is easier to draw overarching conclusions around Forest School, rather than see it as one child's perspective of that particular Forest School. Ridgers et al. (2012) were also clear in their analysis procedure. In contrast, Harris (2017) and Elliott (2015) did not appear to discuss their data analysis process comprehensively and so it is not clear whether the data were verified in accuracy and context, or whether any data that was not included in the study falsified their conclusions. Coates and Pimlott-Wilson (2019), Ridgers et al. (2012) and Harris (2017) only used one set of data/type of participants, with the first two studies only collecting data from children and the latter only from Forest School practitioners. In terms of triangulation, for these three studies, we do not know whether the benefits of Forest School were also perceived from others, such as parents and teachers.

From this review, it appears that some of the papers that used interviews to collect data were of much greater methodological rigour than others. Methodologically rigorous was classified as answering yes (rather than no or unclear) to at least 75% of questions on the CASP or MMAT checklist. It is acknowledged that although these criteria are standardised, deciding what cut off was 'good enough', was chosen by myself as the author and is therefore subjective and limited. Examples of these checklists and questions asked are included in the appendices. Studies that were more rigorous included Coates and Pimlott-Wilson (2019), Bradley and Male (2017) and Ridgers et al. (2012), with Elliott (2015) and Harris (2017) arguably being more limited. However, Coates and Pimlott-Wilson (2019) only used data from children's perspectives and Bradley and Male (2017) had a small sample that make the findings harder to generalise. It is therefore clear that further research, of methodological rigour, with a number of different perspectives/data sets captured, is warranted.

2.3.2: Qualitative data-

Table 2 Observation primary data collection.

Study	Participant Group	Data Collection Method	Critique of methodology	Key Findings	Why Forest school makes this impact (as proposed by authors)	Value of Research
Mackinder, M. (2017). Footprints in the woods: 'tracking' a nursery child through a Forest School session. *Education 3-13*, *45*(2), 176–190.	One nursery staff, One Forest School practitioner one child (aged 2-4 years).	Observation (field notes, audio recording, Leuven Child Involvement Scale and Adult Participation Scale); semi structured interview with adults.	Research design clear, however unclear why one child chosen and whether selection bias. Unclear relationship researcher to participants. Ethics clear, statement of findings clear but not clear how data were selected.	Child showed greater level of independence and explored larger space when session led by Forest School Practitioner compared to nursery staff. Rated Forest School staff teaching style as higher in autonomy, sensitivity and stimulation.	View of what adult should be: children should learn through exploration, trial and error (Forest school leader) led to exploration of greater space and less involvement. Whereas nursery leader emphasised boundaries and protecting children.	Only one child, however useful in terms of why Forest School might result in different outcomes and the way the Forest School practitioner can influence behaviour and independence of child. Research design helpful in seeing cause and effect.

O'Brien, L. (2009). Learning outdoors: The Forest School approach. *Education 3-13*, *37*(1), 45–60. *same data as O'Brien and Murray (2007)*	24 children observed age 3-9 years by six Forest School practitioners (teachers or forest school leader). Included group of children aged 5-9 with speech &language difficulties (three LAs).	Observation of children from Forest School practitioners over eight months.	Method chosen could result in confirmation bias (themes chosen by practitioners first, then looked for observational data to fit). Ethical considerations, data analysis and triangulation of findings all not clear/limited.	Forest School practitioners felt Forest School increases self-esteem and confidence, improves social skills, contributes to language and communication development, improves motivation, contributes to children's knowledge. They also felt this effect was seen beyond the Forest environment.	Leader's questioning whilst child is completing activity promotes reasoning skills. Tasks in Forest school require group work and thereby develop social skills. Child led learning increases motivation. Adult leader's opportunity to observe (due to higher adult child ratio) meant more opportunity to adapt teaching to what child needed.	Although results are some of the first of its kind, study is methodologically limited.
O'Brien, L., & Murray, R. (2007). Forest School and its impacts on young children: Case studies in Britain. *Urban Forestry & Urban Greening*, *6*(4), 249–265.	***Main data:*** 24 children observed age 3-9 years by six Forest School practitioners (teachers or forest school leader). . Included group of children	***Main data:*** Observation of children from Forest School practitioners over eight months ***Additional data:*** 1st LA: nine parents & one	Method chosen makes it difficult to distinguish changes with typical development and changes Forest School. Methodology not clearly documented. Ethical considerations-	Forest school practitioners and parents felt Forest school supports children's physical skills and confidence in the outdoors, developed respect for the environment and interest in the outdoors, learnt how to be safe outdoors. Parents reported	Opportunity to experience risks means learn how to manage them. More space meant freedom to express emotions physically Time around nature helps children to understand it. Child led and flexible nature sessions encourages motivation	Although results are some of the first of its kind, study is methodologically limited and some of findings are unclear. Authors acknowledge that didn't measure what child was like in a different environment and

(Some *data same as O'Brien, 2009; duplicate findings not repeated in key findings column)*	aged 5-9 with speech and language difficulties (three LAs.) ***Additional data:*** 13 parents, six children, two Forest School practitioners, one school staff.	teacher interviewed. 2nd LA: four parents and Forest School practitioners given questionnaire. Six children in a focus group 3rd LA: no additional data gathered.	some but no committee. Some discussion contradictory evidence, but data analysis process not clear, some triangulation but not clear. Parental interviews not clear and whether some of findings were from parents or Forest school leader views.	children wanted to spend time in woodland on weekend.		differences shown may be due to development.
Waters, J., & Begley, S. (2007). Supporting the development of risk-taking behaviours in the early years: An exploratory study. *Education 3-13*, *35*(4), 365–377.	Two children (one identified as risk taker, one risk hesitant). One boy, one girl aged four years four months.	Each child was observed for at least 30 minutes of free play in school and Forest School on two occasions, two months apart.	Method clear. Analysis clear but data not really triangulated	Risk taking child and risk hesitant child both observed to take more risks in the Forest School setting than school play-space.	Authors propose children displayed more risk-taking behaviours as: the rule-bound nature of the school play-space and the contrasting permissive ethos at Forest School. The Forest School environment afforded more varied and interesting forms of risk-taking behaviour than the equipment provided in the school play-space.	Useful in that compares to school setting and shows difference in child that didn't originally take risk. However only small exploratory study of two children; generalisability limited.

Four studies used observational data as their main method of data collection. However, two of these studies used the same observational data set (O'Brien & Murray, 2007; O'Brien, 2009). Although O'Brien (2009), added additional data from interviews, questionnaires and a child focus group to their findings. Mackinder (2017), also supplemented the observational data with semi-structured interviews of those leading the Forest School session, a nursery staff member and a Forest School practitioner. Observational data seemed an appropriate method for Mackinder (2017) and Waters and Begley (2007), as both were looking for differences in behaviour, between two environments. The first between two Forest School sessions, with different leaders, and the second between comparable free play time in Forest School and school. Observation allowed for more detailed data to be captured, which was particularly useful for capturing adult-child relationship dynamics and cause and effect in the Forest School. Data was also captured closer to the time it took place, meaning it was less likely to be impacted by memory biases (Mechera-Ostrovsky & Gluth, 2018), that may take place when recalling information retrospectively, such as in interview and questionnaire data. The data collection method by O'Brien (2009) and O'Brien and Murray (2007) was more susceptible to bias however. Teachers and Forest School practitioners were first asked to retrospectively create themes, that were to be included in an observation template, of the impacts they thought Forest School offered. The practitioners then used this template to support this in the observations; it is possible with this approach, that practitioners looked for what they had already predicted would take place in Forest School (confirmation bias: (Nickerson, 1998).

In some studies, it was not always clear how participants were chosen and whether they represented a 'typical' child, or the sample the author was intending to generalise to. Mackinder (2017) was not clear on the inclusion criteria for participants and so they may

have been chosen by purposive sampling, the limitations of which, have already been discussed in this review. In Waters and Begley (2007) the class teacher was given a standardised checklist and asked to choose the most risk averse child and risk seeking child. This was likely to minimise, but not eliminate, the risk of selection bias, and the subjectivity of teachers' perceptions. A lower risk of selection bias was likely for O'Brien and Murray (2007) and O'Brien (2009), where children from three different LAs, were randomly selected by their teachers.

The analysis of the data and how data was selected was also not always clear in O'Brien & Murray (2007) and O'Brien (2009), particularly for non-observational data. In addition, it was not clear whether, as the studies were over an 8-month period, any change captured instead represented typical development. Furthermore, the studies were also funded by the Forestry Commission, who exist to show the value of woodlands, and thereby could have had a vested interest in the success of the project.

Overall, Waters and Begley (2007) and Mackinder (2017) were more useful, in determining what specific aspects of Forest School may lead to an increased advantage, compared to typical developmental change. However, as these studies included only one or two participants, it is difficult to generalise as to whether this benefit would occur for all children, or just a specific group. Because of this, the findings from the observational data were therefore limited and again further research of methodological rigour is warranted.

2.3.3: Mixed Methods

Table 3 Mixed Methods data collection

Study	Participant Group	Data Collection Method	Critique of Methodology	Key Findings	Why Forest school makes this impact (as proposed by authors)	Value of Research
Tiplady, L. S. E., & Menter, H. (2020). Forest School for wellbeing: An environment in which young people can 'take what they need'. *Journal of Adventure Education and Outdoor Learning*, 1–16	Five children enrolled in the Additional Resource Centre. The children were aged 5, 8, 10, 10 and 10 years, at the start of the project. Eleven specialist provision pupils (aged 12 to 13 years) (n=16). Four parents of children,	***Quantitative:*** Student behavioural and attendance data. Social and Emotional Literacy assessments. ***Qualitative:*** Semi-structured interviews with parents, Forest School practitioners, school staff & young people; observation of Forest School sessions.	***Quantitative***: States uses much more quantitative methodology than is reported in paper. Only behavioural data of four pupils given and no statistical analysis. Questionnaire from pupils in appendix is not referred to in data analysis. ***Qualitative*** Methodology clear, interpretation/analysis clear. ***Integration*** Little integration as little quantitative data disclosed.	Young people, school staff and parents commented on young people being engaged and enjoying Forest School, experiencing social interaction and the building of relationships and an improved self-image. Authors felt children were able to develop in different ways to their peers who had not participated in forest school.	Children less anxious because have fewer negative associations with forest school environment and find it enjoyable, comparatively to the classroom and thereby more able to learn. Children given sense of space and feel free. Team building gives opportunity for social skills and connectedness. Time to work through any difficulties in these relationships. Improvement in self-image as	Differences were not found as much in the classroom. Quantitative data limited. Qualitative data useful suggests positive impact Forest School on wellbeing and self-esteem.

	two Forest School practitioners, school staff number not clear.				chance to experience success.	
McCree, M., Cutting, R., & Sherwin, D. (2018). The Hare and the Tortoise go to Forest School: Taking the scenic route to academic attainment via emotional wellbeing outdoors. *Early Child Development and Care*, *188*(7), 980–996.	11 children 5-7 on entry. Forest School practitioners (Number not disclosed),7 teachers, 3 parents of these children.	***Quantitative:*** Wellbeing and nature connection questionnaire, teacher assessment data. ***Qualitative:*** fieldwork observation, focus groups, and interviews (children).	***Quantitative***: Some risk of non-response bias parental questionnaires; didn't do statistical differences only mean difference analysis. Overall ok. ***Qualitative:*** Discusses how themes generated, discusses explanation around contradictory data, some data when participated for longer benefits reduce. ***Integration*** Data well integrated.	Children reported high levels of wellbeing and engagement in the project and showed an increased connection to nature. Children's attainment in reading, writing and math's improved compared to matched peers. Qualitative data from children, session staff and project practitioners suggested Forest School gave children	Emotional regulation-space to move away from the group and rejoin. Stability and consistency-relationships with adults and place to go. Child-led learning meant had opportunity to reach mastery of task. Staff working with children their perceptions may have changed (viewed children more positively). Wellbeing led to greater attendance at school and	Although only 11 children, very helpful as lots of different data sources. Also shows difference compared to those who didn't do Forest School, so differences less likely to be due to typical development.

				opportunity to self-regulate, it also supported their learning, behaviour and social development.	increased attainment.	
Savery, A., Cain, T., Garner, J., Jones, T., Kynaston, E., Mould, K., Nicholson, L., Proctor, S., Pugh, R., Rickard, E., & Wilson, D. (2017). Does engagement in Forest School influence perceptions of risk, held by children, their parents, and their school staff?	***Quantitative:*** 191 practitioners, 122 parents. ***Qualitative:*** 23 parents, 22 practitioners and 37 children.	***Quantitative:*** Likert Scale questionnaire on risk to parents and practitioners. ***Qualitative:*** Structured interviews with children (limited data), parents and practitioners.	***Quantitative:*** Likert Scale addressed risk around Forest School specific activities not risk that could be generalised? ***Qualitative:*** Yes, but some interpretation of data could be argued as speculative inference, from data presented. ***Integration:***	Parents had concerns around risk in the outdoor environment but felt that risk within Forest School was controlled in interviews. Parents whose child had experienced Forest School were not significantly different in their views of risk than those that hadn't (questionnaire).	Not discussed	Some changes in perceptions of risk found but methodology has limitations. Findings appear very specific to risk in Forest School environment, generalisation appears limited.

Education 3-13, *45*(5), 519–531.			Data is brought together by authors.	Practitioners that had involvement with Forest School were significantly less risk averse (as measured through questionnaire responses) than those that hadn't.		
Richardson, T. (2014). Speech and Language Development in a Forest School Environment: An action research project. *SAGE Research Methods Cases*.	Two groups of nursery children took part, with eight children in each group (N=16).	***Quantitative:*** assessments of speech and language, pre and post. ***Qualitative:*** semi-structured interviews parents and nursery keyworkers.	***Quantitative:*** Confounders not listed and cause and effect difficult to gather. Measurement tools seem ok. ***Qualitative:*** Not clear if interpretations are ok, as not much evidence for data and some sweeping conclusions. ***Integration:*** Data that is presented is integrated.	Children's self-esteem improved, greater desire to speak about forest school (improvement in social communication), vocabulary attention and listening skills improved.	Desire to speak about Forest School (and thereby more opportunity to develop language) because they enjoyed it so much.	New area of data as speech and language not addressed in other studies. But lot of methodology and data not listed.

As would be expected with research that includes quantitative data, most of the studies collected a broader range of data from a number of different stakeholders, rather than focusing on the perspectives of one particular group. The only study that did not appear to aim for a more scoping broader quantitative section was Richardson (2014). This instead looked at change data and whether children had changed on their performance on a speech and language assessment, over the course of attending Forest School. For all studies, the use of mixed methods appeared appropriate at face value, with qualitative data helping add meaning and detail to the quantitative data. If a change did occur in the quantitative data, qualitative data helped explore the hypotheses around why this change occurred, through the perceptions of those involved in the Forest School process.

Savery et al. (2017) and McCree et al. (2018) both included parents as participants by sending out questionnaires. Savery et al. (2017) gathered 122 parental responses relating to how strongly parents agreed or disagreed with statements that related to risk in Forest School. Although a large sample, it appeared that some of the children of these parents had experience of Forest School and some did not; it was not clear how many were in each group. McCree et al. (2018) acknowledged they had difficulty in engaging with parents with three questionnaires being returned at the beginning of Forest School and none at the end of the programme. This doesn't necessarily reflect a criticism of the methodology but does mean it is difficult to draw from these findings for parents.

Tiplady and Menter (2020) and McCree et al. (2018) also used teacher assessment data as part of their quantitative measures. McCree et al. (2018) looked at data for reading, writing and maths and attendance data. Teacher assessment data, however, can bring with it its own difficulties, with teachers often being biased to students who are similar to them (Lindahl,

2016). McCree et al. (2018) looked at how much individuals improved over the period compared to their peers. It is very unlikely that one teacher would underrate the majority of pupils that took part in Forest School, and then a different teacher would overrate the Forest School pupils at the end of the programme, although it is possible. Although every method has its limitations, using longitudinal change data and comparing it to what is expected of peers, appears a very useful method of detecting change (if these groups weren't receiving any other intervention, that may have resulted in the change).

In addition, Tiplady and Menter (2020) looked at the number of behavioural incidents on a day where students attended Forest School, and a day where they didn't; however, it is difficult to establish cause and effect here. There may have been other things on the day, such as finding a particular lesson challenging, that influenced a student's behaviour. The authors also only captured data of whether the mean number of recorded behavioural incidents was less, for four students in total. Without any further statistical analysis, it is difficult to conclude whether the decreases shown were significant. McCree et al. (2018) and Savery et al. (2017), also presented little analysis of their quantitative data.

Richardson (2014) reported using the government produced monitoring tool for speech and language but didn't discuss whether this tool had a reliable evidence base. The researcher also didn't compare the results with peers who had not undertaken Forest School. They noted that there was an "overall improvement", however this would be expected in line with children's typical development (i.e. as children get older, their language skills develop).

The sampling procedures of some studies included in the review were also limited. Tiplady and Menter (2020) did not report how the children were chosen from the specialist provision;

it is possible that those who consented to take part in the study were more amenable than those that didn't (Robinson, 2014). However, as the authors captured almost half of the children in the provision, it is unlikely that such a large proportion would be distinctly different. We can therefore say with some confidence, that the results are likely to be at least generalisable to the rest of the provision.

Savery et al. (2017) used purposive sampling and ensured that 50% of the children, parents and practitioners, had experience of Forest School and 50% did not. Unfortunately, the authors did not disclose the demographics of each group. Demographics may have impacted participants' perceptions of risk, for example ethnic background or socio-economic status (Rohrmann & Renn, 2000). This is important to consider when those who tend to access Forest School, at least anecdotally, may be distinctly different from those that don't (e.g. "middle class reputation": Barkham, 2020) and may have a greater number of protective factors, impacting their behaviour and learning (Moulton et al., 2021). Richardson (2014) and McCree et al. (2018), were transparent in their sampling procedure and in the characteristics of their sample and its generalisability to the full population of the education provision. Although still complex this helps us unpick cause and effect, and the impact of confounders when reviewing the results.

For qualitative data, all studies used interviews as a method to gather the perspectives of those involved in Forest School, with some studies also using additional observational data. All studies, except Richardson (2014), interviewed children as part of their project. Tiplady and Menter (2020), Savery et al., (2017) and McCree et al. (2018) also interviewed parents, school staff and/or Forest School practitioners. Gathering different perspectives is useful for triangulating the data and exploring whether differences were seen/perceived in all

environments (Forest School setting, school, home). For example, we can more reliably infer that Forest School had contributed to the change and not, for example, that the difference was due to a participant group having a particular bias or vested interest in the project.

In terms of the analysis of qualitative data, for Richardson (2014), it was difficult to know whether the data collection and analysis were reliable and whether another researcher would have replicated the findings. For example, Richardson (2014) did not discuss how the interview protocols were created, how the interviews were delivered, nor how the analysis of interview data took place. The author also only briefly referred to the findings from the interviews and presented only one piece of data, from one parent. The other included studies didn't include how the interview protocols were created but were arguably more reliable and consistent, as they were clear on how themes and conclusions were drawn from the data.

It appears that overall, qualitative data, particularly that of interviews in both mixed method and qualitative only studies, appears to be more methodologically sound in the Forest School research for this review. Therefore, it seems at present, we can more securely draw conclusions of people's perceptions of Forest School, rather than on measurable differences, such as skills developed following attendance at Forest School. For comparative studies (where those who attended Forest School were compared to those that didn't) it will be important for any future studies to declare the characteristics of each group, where possible. It will also be important to control any differences that may occur between the groups, so that cause and effect and the impact of attending Forest School, can be reliably inferred.
It is clear, therefore, there is a gap in the research, with limited methodologically transparent literature available. This author's own research, that will be outlined in the following

chapters, will therefore try to overcome some of the previous research's limitations, for example by including a comparative group.

2.4 Synthesis of Findings

Keeping in mind the conclusions from the methodological review and how much weight we can give to the included studies, this review will now discuss the results of the studies themselves. This will be presented in different sections, categorised by age and by whether a mainstream or specialist setting. This is important to distinguish, because the type of institution is likely to influence how much of a contrast the Forest School experience may be for children, compared to the classroom. For example, children in secondary school are likely to have lower adult to child ratios, in the classroom, and less experiences of child-directed activities, compared to the Early Years.

No papers included reference to a mainstream secondary provision of Forest School, and only one paper included participants of secondary age, accessing Forest School in a specialist provision (Tiplady & Menter, 2020). It will thereby be difficult to draw on the influence of Forest School on children's learning for older children, in this review.

2.4.1 Forest School in Nursery and the Early Years

Forest School has been argued by some authors to be a "particularly appropriate experience for children in their early years" (Knight, 2013, p.2). Although the Early Years Foundation Stage framework is arguably more similar to Forest School than curriculums for older children, being more play based and child-led (Ofsted, 2015), a number of studies still highlighted how Forest School created benefits that would not be seen in the Early Years classroom. Nine papers were included in this section, three of which included a sample of

children that were both older and younger than 5; the data was not distinguished, so is included in both corresponding sections.

Autonomy and Child-led.

Coates and Pimlott-Wilson (2019) reported how children interviewed found Forest School a break from the usual school routine, due it being outside and by being offered more autonomy because the activities were child-led. The children noted they could be free to be themselves and it appeared this led to an increased sense of wellbeing. This was also captured in Mackinder (2017), with tracking data of one child, showing a much bigger area was explored by the child in a Forest School session, compared to a nursery session in the same woodland. The study reported the adult who delivered the Forest School session emphasised autonomy, sensitivity and stimulation and the authors wondered whether the child measured higher on levels of engagement and exploration in the session, because of this. Maynard (2007b) also highlighted that activities in Forest School were child-led and children experienced independence, with one interview highlighting this approach was underpinned by a feeling of trust from the staff. Maynard (2007a) also highlighted how Forest School was different from the classroom and as such, teachers sometimes found allowing children autonomy difficult to adopt. Similar to Coates and Pimlott-Wilson (2019), Elliott (2015) found that school staff highlighted differences between Forest School and simply learning outdoors, with staff feeling that a sense of freedom and child-led learning underpinned the Forest School ethos. O'Brien (2009) felt the approach helped children concentrate within sessions and increased their engagement levels; however, the study provided only limited data to support the claim.

Confidence and Self-esteem.

An increase in children's confidence and self-esteem was also highlighted by a number of studies: Maynard, (2007b); O'Brien and Murray (2007); O'Brien (2009); Elliott (2015), Richardson (2014). In Maynard (2007b), Forest School practitioners reported that Forest School raised children's self-esteem by giving them small, achievable tasks. They also reported it helped children who may not have experienced success in the classroom, by presenting tasks in a different format from the formal curriculum. In Elliott (2015)'s study, when school staff were asked what the benefits were to attending Forest School, one of the most frequent responses was children's confidence (94% of staff). When parents were asked the same question, confidence did not appear as frequently, but was still reported a benefit by 58% of those asked. In O'Brien and Murray (2007), parents and practitioners, when interviewed or when responding to a questionnaire, noted their children were more confident in the outdoors, in the classroom and with new situations and people, following attendance at Forest School. Finally, Richardson (2014) reported that from a self-esteem assessment, children who initially were assessed as having very low levels of self-esteem before attending Forest School, were categorised as having very high levels of self-esteem after attending for eight weeks.

Social Communication Skills.

Another benefit to Forest School for nursery and Early Years children, highlighted by the review, was social communication skills. Of staff responding to a questionnaire in Elliott (2015), 16/18 staff felt that social skills were a benefit, although the questionnaire did not allow for elucidation as to how this development took place and what staff constituted as social skills. Coates and Pimlott-Wilson (2019) reported that children discussed a greater number of opportunities to learn alongside peers and do group work in Forest School,

compared to the classroom, when interviewed. The children also reported that they found the interactions enjoyable, although the authors noted this enjoyment was not quite as poignant as it was for the older children in the sample. Children discussed opportunities to learn social boundaries and navigate social conflict through learning how to be flexible and adaptable. However, the authors did also note that some children struggled with this. Opportunities to engage in team work and build skills in collaboration was also observed by practitioners in O'Brien (2009). Finally, Richardson (2014), although referring to speech and language skills, noted the most significant improvement was in social communication, with 80% of children being ahead of development after participating in Forest School. The author argued that children had a greater desire to communicate with others, because they were passionate about what they had experienced in Forest School; this desire was also noted by parents. A greater desire to communicate was also noted by practitioners in O'Brien (2009).

Skills for Learning.

The studies also discussed learning opportunities that children had developed through experiences of play in Forest School. Maynard (2007b) discussed how Forest School assists with the development of problem-solving skills by being child-led. The Forest School practitioners stated when children are attempting to solve problems in Forest School (physical, cognitive, social), they are given the time and space to think about what to do. In Elliott (2015), school staff felt that children learned knowledge of the natural world (17/18 participants), life skills (15/18) and creative skills (17/18). As previously stated, however, these answers were not expanded upon in the staff questionnaire, so it is not clear what is meant by life skills etc. nor how these were gained from Forest School. The author also noted that most of the staff felt they knew little about Forest School in the first instance. In the same study, parents also reported that they felt Forest School helped children learn knowledge of

the natural world (86% participants), develop creative skills (70%) and develop life skills (60%).

Coates and Pimlott-Wilson (2019) also discussed the development of creative and practical skills, with children discussing opportunities to make things from natural materials. The authors felt that creating objects helped them consolidate the story-based learning they had done at school, by providing a relatable setting for children to enact known stories. Quotes presented from the children also suggested an increased knowledge of the natural world, following Forest School. Similar findings around creative skills, an increase of knowledge and an interest in the natural world was also found in O'Brien and Murray (2007) and O'Brien, (2009).

Risk Management.

Differences in navigating risk were also highlighted between the classroom and the Forest School environment, with Forest School giving children the opportunity at a much younger age, to learn how to navigate and manage risk in the outdoor world. In Maynard (2007b), the practitioners felt that Forest School gave children the opportunity to take appropriate risks. The practitioners felt that when children felt comfortable taking risks in the outdoor environment, they were more likely to take risks in their classroom learning, although they did not provide any evidence to support this claim. Maynard (2007a) discussed how teachers felt that the child-led approach of Forest School, and from this a lower level of adult intervention when a child was participating in a risky activity, was too dangerous. The Forest School practitioners on the other hand, felt that the children needed these opportunities to learn how to navigate risk in the real world. Coates and Pimlott-Wilson (2019) noted that Forest School helped children navigate a challenging physical environment. Children discussed opportunities where they had to be aware of what might harm them in the natural

world and how they might avoid it e.g. falling over or getting stung by nettles. They also discussed being given opportunities for their classmates or adults to support them and to be able to ask for help when they were navigating a risky situation, for example, if they were stuck when climbing. Waters and Begley (2007) felt that the Forest School environment and ethos helped children who wanted to take part in more physical risk and challenge, have a safe space to do so. They also felt that it helped children who were risk-averse to develop a more positive relationship with risk and physically challenging activities. Finally, O'Brien and Murray (2007) captured similar findings to the studies discussed, but also observed that these challenges helped progress children's fitness as well as their fine and gross motor skills.

2.4.2 Forest School in Primary School

Seven papers included samples that involved mainstream primary school children; three of these (O'Brien and Murray, 2007; O'Brien, 2009; Coates &Pimlott-Wilson, 2019) also included children under 5 years and have therefore also been discussed in the previous section.

Risk Management.

The only theme to appear in all papers was around children understanding and learning how to navigate risks in the Forest School environment. Savery et al. (2017) looked at changes in perceptions of risk associated with the outdoors, following attendance at Forest School. Changes in risk perception occurred for school staff around: children being able to use tools and knives and adults feeling comfortable for children to be out of sight.

In Harris (2017), Forest School practitioners discussed how children are taught to identify risks in the woodland environment and learn how to navigate them. They also felt that children were challenged in activities, thereby increasing the level of risk they would

naturally feel comfortable with, for example being encouraged to climb higher. The practitioners perceived that through learning to navigate their environment and adapting their behaviour, the children learnt to take more responsibility for their safety and wellbeing. Children also discussed examples of doing this themselves when interviewed in Coates and Pimlott-Wilson (2019).

Although McCree et al. (2018) did not explicitly mention risk in their findings, they did capture a similar finding of 'physical adventure'. In the study, children increased the area they roamed when participating in Forest School; adults also trusted them to do this. The authors also reported that children used Forest School as an opportunity to push their own physical limits and learn what they could do through play.

Nature Connection.

Harris (2017) interviewed Forest School practitioners who felt that as well as increasing children's connection to all nature more generally, Forest School helped children develop a sense of attachment to woodland and to the specific location of where they took part in Forest School. Because of this attachment, the Forest School practitioners felt that children would learn to have respect for the environment and the location of the Forest School. They felt this was a big difference for many children who, at the beginning of the Forest School sessions, often wouldn't treat the woodland with respect and/or were frightened of going into the woods. Children in Ridgers et al. (2012) reported a greater interest in nature and that they had spent more time exploring it, after attending Forest School. O'Brien and Murray (2007) reported that this effect also rippled out to parents, with families spending more time outdoors since their child attended Forest School. McCree et al. (2018) gave children a connection to nature questionnaire which included measurements capturing: enjoyment of nature, empathy for creatures, sense of oneness and sense of responsibility. Unfortunately,

the authors did not discuss which traits the children scored particularly high on, only that following attendance at Forest School, the children scored higher than other pupils in the school that had not participated. However, from the additional data in the child interviews, it suggested that, just as in Harris (2017), children treated the woodland with respect and felt a sense of attachment to it.

Connection to Others.

Two themes were drawn from the literature regarding this. One was the children's connection to the adults who were leading the sessions and the other was connection to each other and the building of friendships and social skills. McCree et al. (2018) noted how children's joy created from the experience helped generate positive social interactions and a sense of connection with one another, as found in children's description of the experience. This was also described by children being interviewed in Coates and Pimlott-Wilson (2019). McCree et al. (2018) additionally noted that over time the children developed trusting relationships with the Forest School practitioners as well as connection to their peers, however the authors did not present any data to evidence this. From these enjoyable relationships, teachers felt that the children's social skills had improved, and they were able to apply these skills in class. These findings were particularly poignant in this sample, who had been chosen due to being economically and emotionally disadvantaged, presenting with behaviour difficulties. This group were more likely to have found forming relationships difficult in the first instance.

In Harris (2017), practitioners felt Forest School helped children build relationships with others. They noted that children were encouraged to take turns to listen to each other, to help each other and co-operate, when participating in sessions. They reported this helped

them build connection with one another and develop their communication skills. This was also reported to occur by practitioners, from observations of children in O'Brien (2009). A small number of parents also noted that their children were more willing to mix with others in their class, following Forest School, in O'Brien & Murray (2007).

Self-esteem and Wellbeing.

Changes in children's emotional wellbeing and their self-esteem, was also noted in the literature. Forest School practitioners in Harris (2017), felt this was due to the Forest School approach appropriately differentiating tasks, so children could then experience success. When the children experienced success, the practitioners noted they grew in confidence and this was often evidenced by them speaking out more in class and appearing happier to the adults around them. McCree et al. (2018) found increased wellbeing and emotional development in both their quantitative and qualitative data. Data from interviews and focus groups with Forest School practitioners, school staff involved in the sessions, and the children themselves, found that Forest School provided children with a physical space and time to express and process their emotions. The children showed both positive and negative emotions in the project but were able to work through these emotions in different aspects of Forest School and learn strategies to regulate them. The researchers also used a wellbeing scale which captured enjoyment in the Forest School sessions. It didn't however capture whether ripple effects were seen beyond the Forest School environment. The mean of all wellbeing scores captured was in the 'fairly high' range, with the 11 children in the sample looking happy and expressive for at least some of the time, in each of the sessions. Improved wellbeing could have extended outside of the Forest School sessions and into the classroom for 6 of the 11 children, who were also noted to have improved wellbeing across the school by teachers. However, the authors noted that school staff who had been present in Forest School sessions

rated children's wellbeing higher than those who saw them in the classroom only and wondered whether it was the staff's perceptions, rather than children's behaviour per se, that had changed. Much of the research on Forest School has involved capturing perspectives, this makes it difficult to unpick whether any change has been in how the children feel, or in how they are perceived by other adults, or both.

Learning Outcomes.

An increase in children's knowledge of nature was found in five papers (O'Brien & Murray, 2007; O'Brien, 2009; Ridgers et al., 2012; Harris, 2017; McCree et al., 2018). In Harris (2017), Forest School practitioners felt this was not the primary goal of Forest School and wasn't something that was planned but happened incidentally, as the children were in the woodland environment. The practitioners also noted that children can learn the use of tools, through nature craft activities.

Of possible greater interest to schools, McCree et al. (2018) proposed that the benefits of Forest School, particularly the increase in emotional wellbeing, led to a measurable improvement, in academic outcomes and attendance. In McCree et al. (2018) children were tracked over three years and compared to similar peers, meaning findings were less likely to be due to typical developmental progression. The authors gathered data from teacher assessments over three years in reading, maths and writing. Scores on writing assessments increased by 12% more than the year group totals, and 11% more when matched to peers (matched for Pupil Premium and Free School Meal status). Reading assessment data increased in those that had participated in a Forest School by 14% more than the year group totals and 5% more than the matched group. Finally, maths assessment data increased 12% more in the Forest School group than the year group totals and 16% more than the matched

group. The authors wondered whether this was partly due to a greater time spent in school, with a 2.4% mean average increase noted in attendance, for the Forest School group.

As previously discussed, teacher assessments are based on perceptions and teachers that have attended the Forest School may view children differently from teachers that did not attend, as was in fact noted with wellbeing scores. However, as the data was taken from a number of different teachers across three years and only two staff were noted to regularly attend the Forest School, it is unlikely the overall scores on teachers' assessments impacted this significantly here. The authors did note they could not be fully clear any changes were due to Forest School and as Harris (2017) noted, as Forest School is often a space free from the demands of the national curriculum, it is unlikely the change occurred from material taught in Forest School itself.

2.4.3 Forest School in specialist provision

Two articles in the review included a sample of children who attended a specialist educational provision. Bradley and Male (2017) included four primary school children who had a diagnosis of ASD and Learning Difficulties. Tiplady and Menter (2020) was the only study in the full review to include secondary school children, possibly reflecting the limited number of secondary provisions that participate in Forest School (Hemery et al., 2019). The study included participants from two schools, the first was five children aged 5-10, from an additionally resourced centre for children with emotional and behavioural difficulties. The second school was a specialist provision for children with a history of anxiety and non-attendance in mainstream education; 11 children aged 12-13 were included from this school, in the sample.

Friendships and social skills.

Both articles discussed how Forest School helped children develop friendships and how important these relationships were for the children. When Bradley and Male (2017) asked children what they liked about Forest School, they noted they liked doing things with their friends; school staff also felt that the children had developed friendships. This is a particularly poignant finding, when children with social communication difficulties can struggle with understanding and maintaining relationships with peers (Koegel et al., 2012). In Tiplady and Menter (2020), primary school children were also noted to enjoy time with their peers and develop skills in cooperation and teamwork, as the sessions progressed. The secondary school children also discussed experiences of building friendships, which the teachers felt was particularly beneficial when they had experienced unsuccessful interactions with their peers in their previous schools. The authors felt that this was also supported by a reduction in the primary school's recorded number of behavioural incidents, on Forest School days. However, this reduction may have been for reasons other than relationships. For example, Forest School may have provided an 'emotional space' for the children, or with a higher adult to child ratio, adults may have been able to intervene before incidents escalated. Unfortunately, as with much of the literature, it is difficult to determine the causality of any the proposed benefits and what specific aspects of Forest School, may have contributed towards this finding.

Risk-taking and Experiencing Success.

As highlighted in other areas of this review, both articles with samples from specialist provision discussed Forest School providing opportunities for children to experience challenge and achieve success. In Bradley and Male (2017) all four of the children interviewed discussed risk taking and experiencing challenge at Forest School. Some of them

showed a sense of pride at what they had managed to overcome, others still felt fearful of certain challenges they had experienced in Forest School. The former was also mirrored in parent responses, who noted their children were no longer worried about getting messy, since attending Forest School and had grown more confident in themselves. In Tiplady and Menter (2020), the children discussed experiences of overcoming physical challenges and phobias in the woods, and the sense of pride they had from this. This was also reflected in the perspectives of teachers and parents.

Learning Outcomes.

Closely linked to risk taking, school staff in Bradley and Male (2017) noted that Forest School helped develop problem-solving skills: that children would be given the right balance of challenges to move themselves forward but also be able to experience success. Parents also spoke of a greater interest and engagement in learning if it was related to Forest School experiences, for example, when writing about an activity or telling their parents about the environment. When children themselves were interviewed, they also seemed to express a great enjoyment for Forest School and their new nature experiences. Learning wasn't directly mentioned but if children were engaged and enjoying the sessions (Willis, 2007), then it is more likely a learning environment was created.

Tiplady and Menter (2020) found a more mixed picture with regards to learning outcomes. Teachers of the younger group reported that the children were more willing to talk about Forest School activities, compared to typical school activities, and thereby felt they were likely to have been more engaged in Forest School. School staff also noted that by the end of the project they felt comfortable taking children outside the school environment to Forest School, where their behaviour was more manageable than on other external visits and trips.

For the older students, although school staff felt that children enjoyed Forest School, they felt they did not see any differences in the children in the classroom.

2.5 Summary of the Research so far

A wide range of possible benefits of Forest School have been proposed from this literature review, particularly for early years and primary school children. This has included independence, confidence, social skills, risk management, connection to others, connection to nature and increased performance and attendance at school. However, much of the research has involved methodological limitations, both in its rigour and in its ability to determine whether observed differences were due to Forest School, or typical developmental progression. Yet, some research was more methodologically sound and showed promise, for example McCree et al. (2018) and Coates and Pimlott-Wilson (2019). The methodological challenges have already been discussed at length in this review and so will not be restated here. However, it will be important for any future research to ensure clear methodology, a design which helps establish cause and effect, and where possible, larger samples to ensure generalisability. The current research will outline how it proposes to build on the literature collected in this review, and where feasible, overcome identified methodological flaws. This will be specifically for the impact of Forest School on primary school children's learning and will be detailed in the chapters to follow.

Methodology

Introduction to chapter

This chapter will outline how the research was conducted and the justification for the choices taken in the research process. It begins by outlining the aim and purpose of the research and the paradigm that underpinned the research. It then looks at the design of the research, the research context, recruitment and participant characteristics and the procedure used. The chapter also looks at the materials used and their rationale, the type of analysis that was carried out and how threats to reliability, validity and qualitative equivalents were attempted to be reduced in the study design. The chapter then finishes with ethical issues that were taken into consideration in the study. This is all underpinned by a reflexive and critical stance, with the author continually discussing the advantages and disadvantages of the choices made in the research process. The data analysis process and its appropriateness for the type of data collected is only briefly outlined in this chapter and will be explored at greater length in the Results chapter.

3.1 Research Aims

This study sought to investigate if Forest School can aid children to develop skills that assist them with future learning. The study was set within the COVID-19 school closure context and so aimed specifically to look at whether attendance at Forest School assisted children in home learning during this period (Spring-Summer 2020). The research questions were as follows:

-What are parents' and children's views on what children learn and how they might develop, following attendance at a Forest School programme?

-What are parents' and children's views on how skills learnt in Forest School were used during the COVID-19 school closure period?

-Was there a difference in children's reported learning behaviours, during the COVID-19 school closure period, between those who had participated in a Forest School prior to the period, and those who hadn't?

3.2 Purpose of Research

Much of the research that exists on Forest School has explored the benefits of the approach and proposed that it assists children in developing skills that they would be unlikely to develop in a typical classroom environment. This research thereby sought to examine this claim and the Forest School programme, to explore whether there was any evidence for the proposition. The overall hope for this design was to provide an evidence base for decision makers, such as education settings, as to whether they should invest in a Forest School programme (Cohen et al., 2007). However, it is also acknowledged that deciding on whether Forest School supports children's learning brings with it its own difficulties. Research is influenced by other factors, such as the context it is implemented in, the particular characteristics of participants, duration of programme and other factors (Pawson, 2013). Some of these problems can be reduced by particular considerations in a research design, however it is acknowledged that even if Forest School was found to impact children's learning, this may only be in particular circumstances.

Another reason that the research was deemed to be of utility for schools was the possible partisan nature of some of the research that has already been carried out. Prior research has been funded by organisations that may benefit, if the research was shown to be successful.

Although it is difficult for any researcher to be fully independent or value free, research and researchers free of financial, political or practical influences of a sponsor are more likely to be reliable and valid (Cohen et al., 2007). It is hoped with the author having little previous experience of Forest School and no link to a Forest School programme, that the reliability and validity of the study was not put into question. As researchers may not always be aware of their own biases or beliefs (Pritlove et al., 2019), where it was feasible, the design aimed to make the research as robust as possible. This was through triangulation of evidence with a mixed methods design, inclusion of a control group and an additional rater in the qualitative analysis, to increase credibility.

3.3 Researcher positioning (Ontology and Epistemology)

Ontological realism proposes that there is a true reality, or world that exists, independently of our perceptions of it (Maxwell, 2011). Taking this approach would mean that there is such a thing as a Forest School in the world and it is not just constructed within the human conceptual system; regardless of our conceptions of Forest School, it will still exist. In this approach the researcher looks at what mechanisms produce events, so what may contribute to learning in Forest School and in what circumstances this may occur. Positivism, states that this reality can be effectively captured by a researcher and what is observed is all that exists (Fadhel, 2002). A positivist standpoint was not taken for this research as it was deemed not appropriate for real-world research; for research that couldn't be fully controlled. This approach was also unlikely to be able to grasp and incorporate the complexities and nuances, that exist in Forest School programmes.

Interpretivism, on the other hand, believes there is no objective reality, thereby viewing the meaning of experience (Guba & Lincoln, 1989). For example, this approach may look to

capture the meaning behind individuals' experience at Forest School. However, this was not the aim of my own research. Much of the research that was included in the Literature review focused on the meaning behind individuals' experiences, which although arguably has its utility, would not have provided an overview of Forest School that could be as easily presented to education settings. As Educational Psychologists (EPs), we must look at whether change is possible (Whitehead, 2019) and broadly speaking this research looked at whether the 'intervention' of Forest School (this term is used loosely as Forest School is intended to be a pedagogy, not an intervention) could make a change in children's behaviour. Interpretivism was therefore seen as not appropriate, as the research aimed to capture a shared reality of Forest School.

Although the research took a realist standpoint, this was in the form of 'critical realism', a type of realism which searches for generalisation but also seeks to look at "identifying those deeper lying mechanisms, which are taken to generate empirical phenomena" (Alvesson & Skoldberg, 2017, p. 40). It therefore did not simply look at observable behaviour, as all behaviour happens in a context. For example, children may have had different experiences of learning in school and at home prior to data collection. It looked at tendencies rather than inevitable, specific and measurable consistencies.

3.4. Adoption of Mixed Methods

3.4.1 Rationale for Mixed Methods

Much of the literature has adopted qualitative case study methods that sought to explore individuals' experiences in one particular Forest School. This research adopted a partially quantitative design to understand evidence of effectiveness (Robson & McCartan, 2015). It also adopted a partially qualitative design to explore the impact of Forest School on

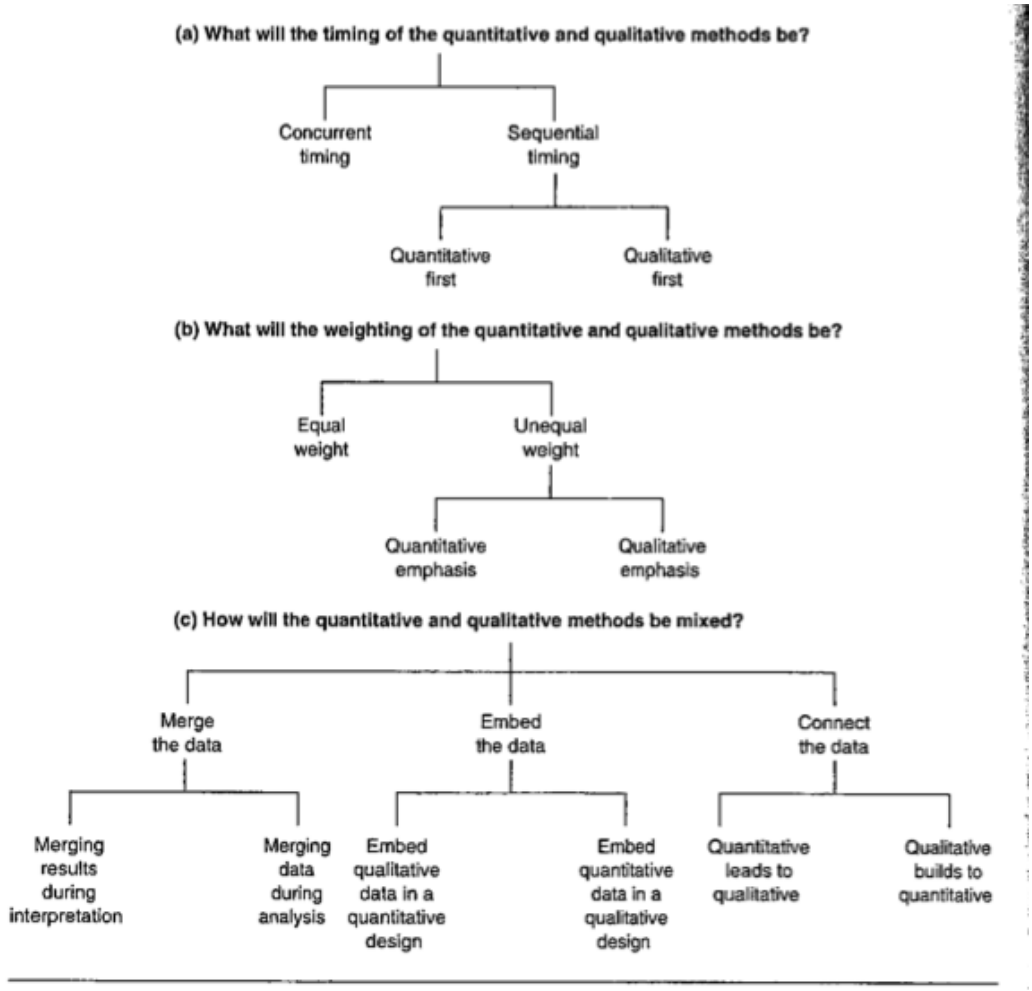
individuals and to explore why Forest School may have been effective in particular contexts (Fixsen et al., 2009). This mixed methods approach relied on the premise that the combination of both approaches would provide a better understanding of the utility of Forest School than either approach on its own (Cohen et al., 2007). The quantitative data aimed to explore a broader overview of effectiveness and the qualitative a more detailed 'why' and to give a context to make sense of the quantitative data (Creswell & Plano Clark, 2018). Where possible, the quantitative data was used to make sense of the qualitative data. The adoption of both designs hoped to overcome some of the weaknesses that can occur with each design on its own (Denscombe, 2014): for example, understanding why Forest School may support children's learning in certain contexts but not others. It is acknowledged that further complications can occur if data from each approach contradict one another, or if one data set is given more weight than another (Creswell & Plano Clark, 2018).

3.4.2 Triangulation design: Convergence model

In mixed methods research there are a number of decisions that need to be made regarding the specific mixed methods design and the procedures that go with them. These are around whether quantitative and qualitative aspects are carried out concurrently or sequentially, whether one aspect is given greater weight, or each treated equally and finally, whether data is merged, one aspect embedded in the other, or connected (Creswell and Plano Clark, 2007). The decisions needed when selecting a mixed methods design are illustrated below (Creswell &Plano Clark, 2007, p.80):

Figure 2

Decisions for Mixed Methods Designs



In order to be able to answer these questions it is important to first look at which model best fits the purposes of the research, as well as the resources available to the project. For example, it would have been difficult to have followed a sequential or multi-phase design (Creswell and Plano Clark (2007) list the exploratory sequential design and explanatory sequential design as examples of this). This was due to the limited time frame in my doctoral study available to collect data, particularly as it may have been unclear what the second phase of the design would look like, and the second phase may have required additional ethical approval; a concurrent method was therefore chosen. Although data will be collected at

slightly separate timepoints, this will be within one phase, without one type of data collection (quantitative, qualitative) informing the other. The adoption of one phase meant the research design could either be a triangulation design, with data treated equally, or an embedded design with either quantitative or qualitative providing a supporting role (Creswell & Plano Clark, 2007).

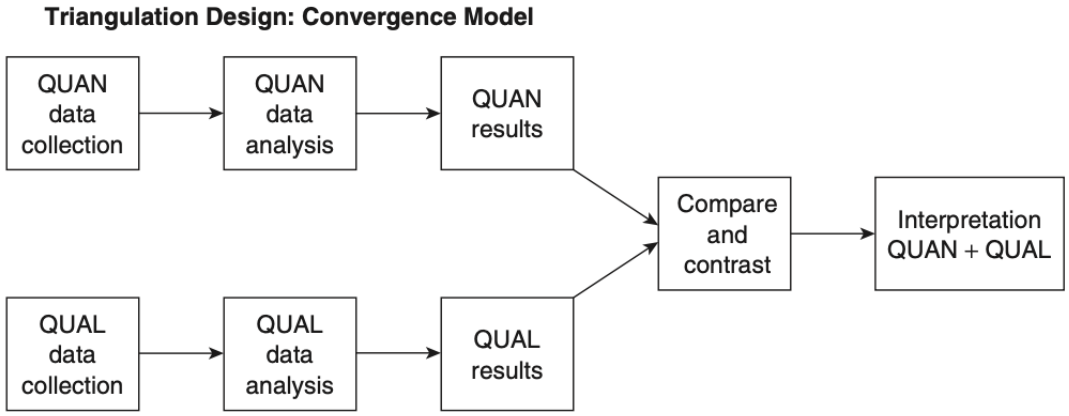
After reviewing the different types of mixed methods models available, the triangulation design was seen as the best fit to match the aims and purposes of the research, as it aimed to obtain: "different but complementary data on the same topic" (Morse, 1991, p.122; Creswell & Plano Clark, 2007). Quantitative and qualitative data will be collected separately and then converged during the interpretation, rather than in the analysis. Procedures will not be used to transform one type of data into the other, as this may result in the data losing the strengths of its type. For example, quantifying qualitative data can result in the nuances of individuals experiences and the richness of this type of data, being lost.

As much of the Forest School Literature has focused on reporting benefits of Forest School using qualitative data, my study will look to see whether these qualitative findings are replicated and whether the quantitative findings corroborate. The purpose of this design was to end up with valid and well-substantiated conclusions about the phenomenon of Forest School (Creswell and Plano Clark, 2007). The 'triangulation design: validating quantitative data model', was not chosen as it was felt that the adoption of qualitative data within the survey, would not have resulted in the same depth of data and may have also led to greater participant drop-out within the survey.

Following these decisions, the 'Triangulation design: convergence model' was therefore chosen. This design is illustrated in Figure 2.

Figure 3

Mixed Methods Design chosen (Creswell and Plano Clark, 2007, p.63).



Note: Quan refers to quantitative data, QUAL refers to qualitative data

3.5 Cross-sectional study and Rationale

It was only possible to capture data from one point in time as COVID-19 restrictions meant that all Forest Schools were suspended during the data collection period and data could not be collected at an additional point. The study therefore used a quasi-experimental, cross-sectional design and aimed to identify whether Forest School is associated with learning. Unfortunately, it was not possible to administer a case-control design as it was not feasible to capture whether learning (the intended outcome) took place in individuals' homes in lockdown, and then look back as to whether they had attended a Forest School. It is acknowledged that a cross-sectional design can only look at association and not causation (Mann, 2003). A cross-sectional design was used to determine the prevalence of behaviours that may assist learning, following exposure to Forest School, and to look at whether there was an association between Forest School and learning behaviours. Because of the associational nature of the data, the research tried to explore and control for other factors in

participants and in the environment, that could have contributed to learning outside of Forest School. The study also looked to overcome threats to validity and reliability and/or trustworthiness and credibility, which will be discussed later in this chapter.

3.6 Selection of Research Setting

The study was largely set in one geographically large LA, in the South-East of England where the author, a trainee EP, was on placement. Choosing this LA, rather than another, meant the author had contacts with a larger number of schools and LA staff members who worked alongside these schools, meaning a larger sample could be reached. To the author's knowledge and at the time of writing, there was no centralised list of which schools ran Forest School in the UK. Therefore, the author was required to use knowledge of LA staff and search engine searches. (Note: Not all schools that run Forest School according to FSA principles are listed on the Forest School Association website). The LA chosen consists of both urban and rural communities and has not only some of the most deprived neighbourhoods in England but also some of the least deprived (Ministry of Housing, Communities and local government, 2019). Mainstream state-funded primary schools were identified in liaison with LA staff, school staff and local Forest School leaders and trainers. The sample was selected from schools that buy in a Forest School provision, rather than private Forest School settings where families have to pay a fee (this was with the exception of one parent interviewed). The justification behind this was that this school sample was more likely to represent a typical variation of children from differing socioeconomic backgrounds, who may not have had previous Forest School experience. Although the author could not find any reports detailing the average characteristics of participants in Forest School, at least anecdotally the programmes often have a middle-class reputation (Barkham, 2020). If this is the case, a private Forest School sample may not have been as representative

of the general population and children attending may have had more protective factors that could assist with learning (Banerjee, 2016). Within the survey itself parents were not asked to identify which school they were from. This decision was taken by the author in order to preserve anonymity of participants. Some of the schools that agreed to participate in the research were very small in terms of their pupil population and the collection of data on multiple demographic factors and the name of the school may have led to this anonymity being broken (e.g. there may have only been one girl in Year 2, receiving FSM and identified as having SEN, in a school of 140 pupils).

An introductory email explaining the purpose of the project, alongside a phone call, where possible, was sent to the identified schools. If schools responded, a discussion was held between the author, senior leadership, and/or Forest School leadership staff to ensure the Forest School took place weekly, was a longer-term programme and that the school had adhered to Forest School Association principles[2]. A number of schools that mixed outdoor learning and Forest School principles could therefore not be included. A number of randomly selected schools in the same LA who did not run a Forest School, as again clarified by discussion with the Senior Leadership Team, were also contacted regarding the quantitative aspect of the study, in order to provide a comparison group.

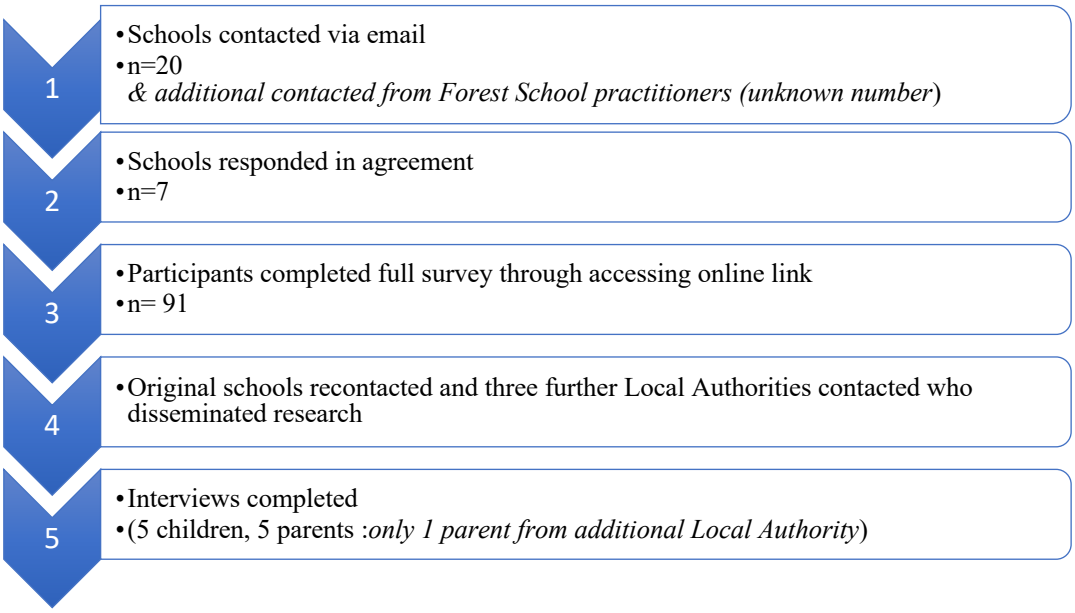
For the qualitative aspect of the research only, the recruitment process had to be made broader due to a lack of uptake for interviews and therefore included additional Las where the author had contacts were included. The author had contacts in other Educational Psychology Services, who could advise of appropriate education settings which participants were then recruited through.

[2] These have been previously listed on p.19 of this report.

3.7 Participants and Recruitment

Once ethical approval had been granted, from the Tavistock and Portman Ethics Committee (please refer to 'Ethics' subsection for further information on this), an introductory email with attached information sheets and consent form was distributed. The information sheet included information on the quantitative (survey link) and qualitative aspects (interviews) of the research. Recruitment was sent via the schools' senior leadership to all parents in their setting, requesting for those who wished to take part to click the link for the survey and to get in contact with the researcher directly for the interviews. The researcher did not have a list of parents contacted, as parents were deemed not to have consented to be contacted by the researcher at this point. As previously noted, because the survey was anonymous, recording which school the child belonged to may have jeopardised this anonymity, so it was not possible to identify the number of participants from each contacted school. Information that was captured regarding participant characteristics is listed below. The sample size collected was the maximum number possible from responses within the 6-month data collection window during this doctoral study.

Figure 4
Recruitment Procedure



3.7.1 Inclusion Criteria

Survey (Forest School group and comparison group).

- Parent of primary school aged child
- Parent of child that attends a state (non-fee-paying) school
- Parent of child who had been educated at home during the COVID-19 1st school closure period (March-July 2020)

Forest School group only.

- Parent of child who had participated in Forest School programme prior to 1st school closure period (before March 2020)
- Forest School took place regularly (as perceived by parents)

Interviews.

- Parent of nursery-primary school aged child (Parent Interviews) *OR* primary school aged child (Child interviews)
- Parent of child, or child themselves, who had been educated at home during the COVID-19 1st school closure period (March-July 2020)
- Parent of, or child themselves, who had participated in Forest School programme prior to 1st school closure period (March-July 2020)
- Forest School took place weekly and ran for 6+ months

3.7.2 Procedure

The procedure for the quantitative aspect of the research has already been discussed in the prior subsections. For the qualitative aspect of the research, interested participants (parents),

contacted the researcher directly, who then re-disseminated the information sheets and consent forms and asked the parent if they had any further questions. This time was also used to check whether the possible participant (parent or child via parent) fit the study's inclusion criteria and whether they had access to a video call platform for the interview (all participants had access). When consent forms were returned, participants booked in a time to be interviewed, and/or for their child to be interviewed. The video call platform was a university approved and Tavistock and Portman National Health Service Trust Ethics approved, software programme. Interviews lasted for 30-40 minutes for children (dependent on the age of the child) and 40-50 minutes for parents. The interviews were audio recorded by the video call platform and stored securely, in password protected files, on the researcher's computer. Identifiable information and the corresponding interview code were stored in a separate password protected folder and not included within the interview itself. Interviews were given codes so they could be re-traced back to the participant if needed e.g., if the participant wanted to withdraw their data at a later date. Recordings were reviewed and transcribed by the researcher for analysis.

3.7.3 Participant Characteristics (Quantitative)

Of participants who completed the full survey the following characteristics were captured.

Table 4

Demographic characteristics of survey participants.
Frequency in Forest School group and comparison group, at time of data collection.

Participant Characteristic	Forest School n (% group)	Comparison group n(% group)
Group total	44(100)	47(100)
Year Group		
EYFS	3 (7)	5(11)
Year 1	7 (16)	9(19)
Year 2	12 (27)	4 (9)
Year 3	12(27)	11(23)
Year 4	3 (7)	12(26)
Year 5	7 (16)	5(11)
Year 6	0 (0)	1(2)
Gender		
Male	26(59)	25(53)
Female	18(41)	22(47)
Receipt of FSM		
Yes	8(18)	9(19)
No	36(82)	38(81)
Identified as SEN		
Yes	3(7)	7(15)
No	41(93)	40(85)

Note: Two questions within the survey collected data on the frequency that children attended Forest School. One of these asked whether children had attended for over 6 months and required a Yes/No response with 21 parents answering yes and 23 no. Parents were also asked to write in a free text box, the frequency and duration of their child's Forest School. Unfortunately, participants often provided partial or unclear information, it was therefore not felt helpful to present this information here.

3.7.4 Participant Characteristics (Qualitative)

Adult Interviews.

Code	Parent	Gender of child	Age of child
A1	Mother	Male	7 years (Year 3)
A2	Mother	Female	4 years (EYFS)
A3	Mother	Female, Female, Male	4 years, 4 years (EYFS), 10 years (Year 6) (*mother had 3 children that had completed Forest School*)
A4	Mother	Female	10 years (Year 6)
A5	Mother	Male	7 years (Year 3)

Child Interviews.

Code	Gender of child	Age of child when interviewed
C1	Male	7 years (Year 3)
C2	Female	4 years (EYFS)
C3	Female	10 years (Year 6)
C4	Female	10 years (Year 6)
C5	Male	7 years (Year 3)

It is acknowledged that under the aims and critical realist stance of this study, a larger sample of participants interviewed would have been more beneficial, in order to increase the studies generalisability. However, this aspect of the study aimed to supplement and triangulate the quantitative data, by adding a richer contextualised picture and exploring in depth individuals' Forest School experiences; it was therefore felt the sample was sufficient for purpose.

Unfortunately, no fathers responded to the recruitment process and thereby only mothers were interviewed; it is acknowledged this may have impacted what was discussed within the interviews and the participants experiences.

3.8 Materials and Rationale

3.8.1 Quantitative

An online questionnaire was chosen as the author felt this was the most appropriate method that was able to reach a wide sample quickly and collect individual's views. The review of the literature highlighted the need for future Forest School research to have larger samples from populations that don't receive income from Forest School (such as parents and children). As parents may have felt worried about being judged on their parenting skills or experiences in lockdown (Sellgren, 2020), it was felt important for the questionnaire to be anonymous. The easiest and cheapest way to do this was through an online platform, rather

than through postal or telephone methods; the programme chosen was available through the author's university (Qualtrics). It is acknowledged that online dissemination meant participants with low literacy levels may have found the survey difficult to complete. In order to try to overcome this, the language used in the survey was made as concise and simple as was feasible; the survey was also made available for use on a mobile phone. Finally, the survey length was also made to be succinct as was possible, with participants only required to answer and see questions that were relevant to them in order to try to reduce dropout. However, twenty-one individuals still did not complete the full length of the survey.

Due to the unique nature and context of the research, the questions were created solely for the purpose of the research and not based on any prior standardised or tested questionnaire. Questions included within the survey were based on what had been captured within the literature review of this report, for example papers included in the review cited that Forest School led to increased emotional wellbeing in children who participated (e.g. McCree et al., 2018). Parents were therefore asked about their child's emotional wellbeing during this period to see whether effects previously cited had generalised to the home learning environment. Readers are referred to the appendix for the questions included within the survey and to the table in the succeeding subsection for steps taken to ensure the reliability and validity of this process.

Participants were informed of the study's inclusion criteria within the information sheet. However, to safeguard whether they met these, participants were also asked additional questions within the survey, which meant they were stopped from completing the rest of the survey or were later able to be excluded from the analysis (e.g., to ensure whether Forest School took place regularly, to ensure whether child had learnt at home during the period).

In quantitative studies, internal validity looks at whether variations in the independent variable have resulted from a change to the dependent variable, not from other confounding factors (Fraenkel et al., 2018). Keeping this in mind, the survey looked to control for a number of possible confounders in its analysis. The survey captured self-reported parental data on: whether the child had an identified SEN, received free school meals (FSM: a proxy for low socio-economic status) and gender. Although we captured perceptions of learning and behaviours related to learning from parents, rather than data on whether the 'learning' took place (which is very difficult to capture), it was still important to control what other factors may lead to barriers in home-learning. For example, boys have been reported to be less likely to enjoy reading than girls (Clark, 2019), children with SEN may not have the resources they need to access education at home (Masonbrink & Hurley, 2020) and children from low socioeconomic backgrounds may lack the space and resources (Van Lancker & Parolin, 2020). It is acknowledged that the proxy of FSM does not always indicate pupils of the lowest socioeconomic status, but within an anonymous survey where other indicators such as Index of Multiple Deprivation and thereby local area lived in, could not be captured without having identifiable individual data, the FSM was the best indicator available (Taylor, 2018). It was also decided it was not appropriate or helpful to ask parents additional questions on their income. Firstly, income level does not necessarily capture a family's ability to afford necessities or the extent they are 'experiencing poverty' and capturing parent's disposable income was likely to have resulted in a significant number of questions being added to the survey, compared to the Free School Meal status that could be captured by the inclusion of one question (Office for National Statistics, 2020). Free School Meal Status has also been used rather than income levels in in other educational research (Public Health England, 2018; Office for National Statistics, 2020).

After reviewing the British Psychological Society Code of Human Research Ethics, the author also felt that the cost of capturing data on parental mental health and parental educational levels (to use as confounders and control for in the analysis) outweighed the benefit and could have breached the listed principle of "Respect for the autonomy, privacy and dignity of individuals" (p.6, BPS, 2021). Although the survey was anonymous this additional information collectively could have also led to personally identifiable information. In addition, although parental mental health has been shown to impact children's wellbeing (Spinelli et al. 2020), at a time when parents were already under stress and the reporting of mental health and educational levels may have invoked further stress and shame, it was decided this should not be collected. Results from the co-space study also suggested that some of the greatest contributors to parental stress during this time was whether a child had an identified special educational need and their child's emotional wellbeing (Waite et al., 2020), both of which were captured by the survey. Parents were asked how difficult they found it educating their child during this time and how they felt their child managed their emotional wellbeing and these were seen as useful indicators of parental stress and how parents felt things were managed during this time. The limitations of the discussed confounders not being collected will also be reflected on within the discussion.

The number of factors that may lead a child to be at a greater disadvantage in learning compared to their peers are vast from being a Looked after child (Sebba et al., 2015) to being identified as having a language difficulty (Law et al., 2017) and could not all be captured within the scope of a brief survey. The qualitative aspect of the research was therefore used to explore the more detailed nuances of children's lockdown experiences and what difficulties and protective factors may have contributed to these experiences.

3.8.2 Qualitative

The quantitative aspect of the study aimed to gather a broad overview of learning during lockdown and the skills Forest School may bring. It also aimed to collect data on the impact of Forest School more generally. The qualitative aspect of the study was used to bring detail to the study and to explore participants' thoughts and beliefs as to how, if at all, their child's Forest School experience impacted their home learning experience. As this was a novel topic it was not felt appropriate for these to be standardised or closed ended (which may have resulted in unsuitable quantitative data anyway). People's experiences in lockdown had not been heavily researched prior to the study protocol being written and so the author wanted to ensure a wide range of experiences could be captured. However, in order to ensure that data gathered was in line with the research aims and the evaluation of Forest School, a semi-structured, rather than free flowing, interview protocol was used. This was created by the main author, following study of previous interview protocol in the available literature and through consultation with a local Forest School organisation, to clarify whether content was relevant. Similar questions were asked in both child and parent interviews, in order to enable later triangulation of findings. However, child friendly, simplified, language and a shorter interview schedule (created by including fewer questions) was used for the child interviews, in order to assist their understanding of topic content and their ability to sustain attention throughout. Opening interview questions aimed to gather an overall context of children's Forest School and home learning experiences and were broad in nature. This was to support the child and parent to relax into the interview process and to enable the interviewer (the study's author) to understand the context that they could later unpick further. For example, if a parent or child discussed in the initial opening questions about being able to choose what to do in Forest School, the interviewer would ask for further examples in the Forest School context and ask whether this also generalised to the home learning context. Later questions

focused on content related to the research questions and whether children learned and/or benefited from Forest School, whether this was generalised to the home learning environment and whether schools should invest in the programme. The interview protocol was then piloted and amended as necessary; readers are referred to the validity and reliability subsection of this chapter, for detail on how this took place. Readers are also referred to the appendix for the interview questions.

Although Forest School practitioners may have had the greatest insight into what learning went on at Forest School, it was felt that parents would have the greatest insight into what learning had taken place at home, during the COVID-19 school closure period, and were therefore selected to interview. It was also felt that from the literature review, parent views had not been captured as frequently as child or practitioner views, and so this would be a useful supplement to the research field. As teachers had little face-to-face contact with children during this time, it was felt they wouldn't be able to discuss in detail the impact of Forest School on children's home learning. It was also felt important to interview children about their Forest School experience, despite this having previously been captured in some of the research highlighted in the literature review. Children were the only group that had experienced both the Forest School and home environment, and arguably would have the greatest insights into their own learning experiences and why and how they may have 'learned'. As the recipients of Forest School who may not get a choice on whether or not it is provided by their school, it was also felt important to include children's voices in the research. The paramount nature of this is also evidenced by national and universal legislation (The United Nations Convention on the Rights of the Child, 1989; Children and Families Act, 2014).

A focus group could have also been used to gain the data, but logistically, in order to get the maximum number of participants and as individuals may not be available at the same time, it was felt that individual interviews were the most appropriate qualitative method. Furthermore, focus groups can lead to participants forming cliques or coalitions and individuals finding it harder for their voices to be heard (Salkind, 2010).

Due to the COVID-19 context it was not possible, or appropriate, to use observation as a method of capturing data. This was for both data on children's learning during lockdown and as a method of quality control, to observe whether the Forest School participants attended, was following the Forest School Association approach.

3.9. Data analysis and rationale

3.9.1. *Quantitative*

Survey data were analysed using a mixture of descriptive and inferential statistics; the sample was tested to see whether parametric or nonparametric inferential statistics were most appropriate (whether parametric assumptions are met)**.** Nonparametric tests were found to be appropriate in each instance. Descriptive statistics were used to describe the demographics of the two groups within the sample. Chi square analyses were used to explore whether groups were significantly different in terms of characteristics in the first instance and could be compared. The survey data were a mixture of continuous, ordinal and categorical data, therefore the non-parametric test used was dependent on the type of data. A Mann Whitney U test was conducted to compare group responses for each question.

To conduct this statistical analysis the data was inputted into Statistical Package for Social Sciences (SPSS) https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2047601/.

3.9.2 *Qualitative*

Interview data were analysed using thematic analysis (TA), a widely accepted analysis method with a clearly detailed procedure for qualitative data (Braun & Clarke, 2006; Braun & Clarke, 2012). TA is a method for identifying themes and patterns of meaning across a dataset, in relation to a research question, and can be used across a range of theoretical and epistemological approaches (Braun & Clarke, 2006). It was seen as the most appropriate method for the purposes of the research and the identified research questions. The research sought to look at whether Forest School supported learning, rather than how individuals make sense of their Forest School experience, the latter in which Interpretative Phenomenological Analysis may have been more appropriate. The research did not aim to generate a theory relating to Forest School, nor look at understanding social processes prominent in it, so other analytical methods such as Grounded Theory were also not seen as appropriate. There was also little scope for methods that lie within specific epistemological stances such as discourse analysis (Potter & Wetherell, 1987).

Although there are a number of decisions to make within the process on the type of TA you wish to pursue, TA broadly involves the following steps (Braun & Clarke, 2006, p.87):

Phase	**Description of the process**
1.) Familiarise yourself with the data	Transcribe data, read and re-read the data, note initial ideas.
2.) Generate initial codes	Code interesting features of data in systematic fashion across the entire data set, collating data relevant to each code.
3.) Search for themes	Collate codes into potential themes, gathering all data relevant to each potential theme
4.) Review themes	Check if the themes work in relation to coded extracts and entire data set, generate a thematic map of the analysis.

5.) Define and name themes	Ongoing analysis to refine specifics of each theme and the overall story the analysis tells, generate clear definitions and names for each theme.
6.) Produce report	Select vivid, compelling extract examples, final analysis of selected extracts, relate analysis back to research question and literature, produce scholarly report of the analysis.

In order to generate an audit trail and ensure trustworthiness of the data, extracts of this process, the themes and thematic map are listed within the appendix.

There are a number of decisions that need to be made, regarding how to carry out TA and which is most suitable to the research that will be carried out. One of these is whether an inductive, moving from the specific to the general ('bottom-up'), or deductive, moving from the general to specific ('top-down') approach is taken to the data.

An inductive approach was chosen, where themes and patterns were identified using a 'bottom-up' approach. This was felt appropriate as, although different theories have been linked to Forest School, home learning in lockdown was a very unique and new concept that has not been heavily researched. In addition, and as discussed in the literature review, much of the prior research has been of poor methodological quality, meaning it would be difficult to reliably generate hypotheses to test with the interview data. Furthermore, it was felt an inductive approach would assist the researcher with remaining open to new concepts and findings that emerge and reducing the likelihood of trying to confirm what has been shown in past literature in the analysis process.

Another decision that needed to be made about how the research was carried out was whether to take a reflexive approach (e.g. Braun &Clarke, 2019), a coding reliability approach (e.g Guest et al., 2012) or a codebook approach (e.g. Roberts et al., 2019). It was not appropriate

within the scale of the project to take a codebook or coding reliability approach, with multiple coders, nor would it have necessarily led to a greater accuracy in coding. From the Critical Realist standpoint, it would be difficult for multiple coders to reach the same objective reality and agree as: "analysis is always shaped to some extent by the researcher's standpoint, disciplinary knowledge and epistemology" (p.247, Braun &Clarke, 2013). Therefore, each researcher's analysis would be subjective and the interpretations and subsequent findings different. Furthermore, the Coding Reliability approach begins the analysis process with theme development and then looks to identify data relevant to each theme and so is arguably more deductive in nature (Braun & Clarke, 2019), when the inductive approach had already been chosen as most appropriate for my research.

As my research dictated an open inductive approach, with no prior codebook or framework, a reflexive TA approach was therefore seen as most appropriate. The Reflexive approach requires the researcher to continually question the assumptions they are making in interpreting and coding the data. This acknowledges the subjectivity of the researcher in the analysis process. It acknowledges that the researcher's training, values and past experiences, will inform and influence their conceptualisation of TA and the way they interpret and codes the data, even if there are efforts to reduce this (Braun & Clarke, 2019). In order to develop a richer analysis of the data and aid reflexivity, theme generation was discussed with three other Trainee Eps, not involved in the project. This assisted me as the researcher to be thoughtful with the data and assisted me to persevere with the analytical 'work' involved in the analysis (Braun & Clarke, 2019), creating meaningful themes rather than descriptions of what the participants had said.

The research also aimed to focus on a largely semantic approach, looking at what participants explicitly said, rather than reporting underlying implicit assumptions to what they said (latent approach). These was seen as appropriate for the research's epistemological positioning and research aims. In a small number of instances, particularly in the children's data, I felt it necessary to code latently in order not to miss out on possible rich meaning behind the data; where this occurred, it is explicitly stated within the Results chapter. As TA does not occur within a "theoretical vacuum", even if used inductively (Braun & Clarke, 2019), data will be analysed within a critical realist framework. Under this framework, it is seen that participants observed a reality that existed separate to their perceptions of it, but that their background, biases and previous experience, influenced how their perceptions of it were reported to me as the interviewer.

3.10 Validity and Reliability

The author will explore threats to reliability and validity and how these were attempted to be reduced in the research design, first for the quantitative methodology and then for the corresponding concepts in the qualitative methodology. For further information on definitions and evaluation criteria of each data set, readers are referred to the identified reference within the listed tables.

3.10.1 Quantitative

Threat to Internal Validity (Slack & Draugalis, 2001)	**Efforts to reduce**
History	As the survey was anonymous, it was not possible to capture whether other life events external to Forest School (other than demographic characteristics discussed) took place.
Maturation	In order to see whether skills learned were due to time and typical development rather than Forest School, a group that had

	attended Forest School were compared to a group that hadn't (but that would have experienced typical development during this time period).
Testing	The survey was only captured at one point in time therefore there were unlikely to be any practice effects.
Instrumentation	The survey instrument was piloted by another LA EP to check the home-learning content was appropriate and by a Forest School practitioner to check the Forest School related content. It was also piloted and sent to 'critical friends' (not in education) to ensure the survey was accessible to as many parents as possible. The survey software also automatically rated the survey for accessibility and noted no changes were needed.
Statistical Regression	Participants were not selected on the basis of extremely high or extremely low attainment/learning. Data were tested for parametricity and statistical analysis was adapted to suit.
Selection	Recruitment information for the survey was sent out via schools rather than through Forest School practitioners, who may want to show its effectiveness. Schools may still show a bias in demonstrating effectiveness but this impact was thought to be less than recruitment strategies in previous Forest School research.
Attrition	Data were only collected at one point in time. Incomplete survey responses were analysed to see whether they were significantly different to participants that completed the full survey.
Selection-Maturation Interaction	Due to the nature of the study, it was not possible to randomly assign groups. Participants would have had different home-learning experiences and different Forest School experiences; only an association could be captured. Strict Inclusion criteria and controlling for confounders attempted to reduce this.

Threat to External Validity (Taylor & Asmundson, 2007)	Effort to reduce
Interaction of selection and experimental condition (Participation in Forest School)	Participants recruited from as many different schools as possible and not excluded due to particular demographics. Control group and Forest School group in survey naturally occurring and not chosen by researcher. Although only one LA recruited from, its characteristics were diverse, as discussed. Recruitment was largely through school's selection of participants so could have missed particular groups of children such as those not on roll at a school. However, the study was looking to explore whether schools should adopt Forest School. It is acknowledged that a particular threat to validity was the sampling procedure, a mixture of convenience and purposive sampling could mean that those who chose to respond to the survey had particularly polarised opinions on Forest School or on their experiences of home learning.
Interaction of setting and experimental condition (Participation in Forest School)	It could be argued children may be more engaged in Forest School because of its novelty. However, Forest Schools included in the study were required to be regular and over a prolonged period of time, meaning any novelty effect would be less likely.
Interaction of history and experimental condition (Participation in Forest School)	The COVID-19 context with students learning at home was unlike other points in history[3] and not as children or parents had experienced before. This makes it more difficult to generalise whether this learning could also have been observed at a different point in time.

Types of reliability (Heale & Twycross, 2015)	Explanation
Inter-rater	Survey was a self-report measure and therefore not influenced by researcher's perceptions.
Test-retest	This was not possible to explore within the study as participants could not be given survey measure on two occasions.
Internal consistency	Homogeneity of the survey measure was analysed using the appropriate statistical

[3] Presence of global widespread pandemic and formal Forest School provision in UK society

	measure and is discussed within the results section of this research.

3.10.2 Qualitative

Evaluating the quality of qualitative research is arguably more complex. Some authors believe it should be evaluated under the same criteria as quantitative research (Johnson, 1997), some that it has to be judged on its own 'qualitative only' criteria (Lincoln & Guba, 1985) and others that it can't be judged on any predetermined criteria (Rolfe, 2006). However, mixed methods researchers note that inferences produced in the research process are generated in the application of sound methods and credible findings, from each study strand (Teddlie & Tashakkori, 2009; Plano Clark & Ivankova, 2016). Therefore, this author has chosen to evaluate the qualitative strand of the research by the criteria that have been widely accepted in the qualitative only field and have been used effectively with TA and interview methodology previously (Creswell, 2014; Nowell et al., 2017).

Yet, even the number of criteria to evaluate has been debated in the research, with Tracy (2010) proposing eight criteria (worthy topic, rigour, sincerity, credibility, resonance, significant contribution, ethical, meaningful coherence) and Lincoln and Guba (1985) proposing four (credibility, transferability, dependability, confirmability).

As the additional criteria from Tracy (2010) have largely been addressed elsewhere in this review and the Lincoln and Guba (1985) criteria have been noted as more widely accepted and easily recognised by the research field (Nowell et al., 2017), this research will look at threats to the latter four key criteria, that they have defined as 'trustworthiness' in the Table below. These criteria transfer to both the internal and external validity criteria seen in quantitative methodology.

Threats to trustworthiness (Lincoln & Guba, 1985)	Efforts to reduce
Credibility	***Prolonged and persistent engagement:*** The author spent time learning about Forest School through the literature and through networking with local Forest School agencies so that rapport could be easily built at the start of interviews. ***Triangulation*** As well as being triangulated with the quantitative aspect of this study, the research gathered views from both children and parents. During the analysis, codes from the researcher were also checked by other analysts. ***Peer debriefing*** The researcher received research supervision which allowed the researcher to unearth any biases they may have that were influencing the research process. Supervision also allowed the author to explore contradictions in the findings. ***Member checking*** A summary of each interviews findings was reflected back to the participant at the end of each interview to clarify findings. Participants were also given the opportunity to comment on draft findings once analysis was complete.
Dependability	***Audit:*** adequacy of data and results/conclusions drawn were regularly discussed in research supervision and therefore checked with another researcher.
Confirmability	**Audit trail:** All decisions regarding the research design were documented in a research diary; rationale for these decisions was included in the main body of the research. This diary was also a chance for reflexivity on the research process and for the values of the researcher to be explored.
Transferability	***Detailed account of research processes*** The researcher ensured there was a detailed account of research processes such as the setting, participants and analysis so that conclusions could be more reliably drawn to other settings, participant groups and contexts.

3.11 Ethical Considerations

Prior to the recruitment stage of the research, ethical approval was sought and granted from the Tavistock and Portman National Health Service Trust's Ethics Committee; this was granted on the 02/04/2020 with amendments granted on the 04/05/2020 (please refer to appendix I). Information sheets were provided via email, detailing what was involved in the study and what would happen with each participant's data. An additional 'child friendly' information sheet was also created and disseminated, in order for children to be able to access information regarding the study directly.

Following this, informed written consent (one copy kept by participants, one by researcher) was gained from all parents in the study and by parents on behalf of their children, before any interviews took place. Children were also asked for additional verbal consent before the interview started and reminded at the beginning of the interview, they did not have to answer any questions they did not want to. The researcher also kept vigilant for any non-verbal cues that may have suggested the child was uncomfortable and didn't want to continue; parents were also asked to look out for these indications. All participants were reminded again at the end of the interview that they could withdraw their data; as an additional measure, children were also informed they could communicate this wish to their parents rather than to the researcher directly. Participants for both the survey and interviews were also given an additional contact of the researcher's supervisor, if they did not feel comfortable contacting the researcher directly.

As interviews took place online, for additional safeguarding measures, parents were asked to remain in the vicinity and for younger children, adults were asked to remain next to their child but not contribute to the interview itself. Although it was possible that some children

may have felt more hesitant to speak in front of their parents, it was hoped with the research content not likely to have been sensitive in nature, the presence of a familiar adult would assist the children to feel more comfortable in the interview.

For the quantitative aspect of the study, no consent forms were collected as the survey was anonymous, with no identifiable data being linked back to participants. Participants who did not complete the survey were seen as wishing to withdraw their data. This data was therefore not analysed and securely deleted once analysis had begun.

For a full declaration of ethical considerations, readers are referred to the ethics application form (and confirmation of approval of the study) in the appendix.

Results

Introduction to chapter

This chapter provides an overview of the quantitative and qualitative findings, from this research study. The method and procedure of the quantitative analysis of survey data is first outlined; this also includes preliminary analyses, to test if parametric assumptions were met. Findings were then presented for each survey question, broken down into Forest School and non-Forest School (comparison), group findings. Following this the analysis of qualitative interview data is presented, first for themes from parent interview data and then for themes from children's interview data. Following each section, findings are summarised and where appropriate compared to findings that have already been discussed, to gain an overall picture of the results.

4.1: Introduction to Survey Data

This section will show a breakdown of participant's responses to each question within the survey (all survey questions are listed in the appendix). The first nine questions in the survey will not be presented in this chapter, as these questions were either to: confirm that participants met the inclusion criteria, explore the length and frequency of the child's Forest School (if applicable), or to report the child's characteristics (demographic data). Demographic data of the complete sample has been outlined in the previous chapter, alongside the reasoning behind the statistical tests chosen for analysis. Tests of normality were carried out prior to each analysis, to determine whether a parametric or non-parametric test should be administered, and to determine whether the sample had a normal distribution. The Shapiro Wilk Test was chosen for this due to the smaller sample sizes that existed within the study and the tests' greater sensitivity for small populations (Thode, 2002). Groups were independently assessed for normality and both were required to have a normal distribution for

a parametric test to be chosen; this was seen as a suitable method from prior literature (Rochon et al., 2012). In all instances, samples deviated from normality and therefore a non-parametric test was chosen. As the groups were not normally distributed, the Median value and interquartile range were seen as more appropriate to present rather than the Mean and Standard deviation. Where survey responses were categorical, the mode category was presented, in place of the median value.

Preliminary analyses were carried out to explore whether there were any differences between groups, for factors other than the independent variable, that may have contributed to the results. A chi square test of independence found no significant differences for gender, X^2 (1, N=91) =0, p=.571, for identified SEN, X^2 (1, N=91) =1.52, p=.218, for Free School Meal status, X^2(1, N=91) =0.14, p=.906, and for year group X^2 (6, N=91) =11.44, p=.076, between the Forest School and Comparison group.

When the Forest School group was limited to those who had participated in Forest school for 6 months or more, there were also no significant results from a chi square test of independence. No significant differences were found for gender, X^2 (1, N=68) =0.091, p=.762 and for year group X^2 (6, N=68) =6.625, p=.357, between the Forest School and Comparison group. A Fishers exact test also showed no significant differences for identified SEN, (p=.419) and for Free School Meal status, (p=1.00) between groups.

The tables below, capture the results from the Likert scale responses (or similar), in percentages and are split into parents of children that had participated in a Forest School prior to lockdown, and parents of children that hadn't. This was done to allow for comparison between responses. All parental responses of children that had attended a Forest School on a regular basis (n=44), will first be presented and compared to a non-Forest School group

(n=47). Following this, the Forest school group will be limited to those who had regularly participated in a Forest School, for a period of at least 6 months (as the Forest School Association specify Forest School is a long-term process) and compared to the non-Forest School group. However, this resulted in a much smaller Forest School sample (n=21) and therefore findings from this are more limited.

4.2: Survey Data

Table 5.

On average, how many hours per day did your child spend accessing the school curriculum/work set by their school at home? (during term time only)

Number of hours	Forest School		Comparison Group	
	n	*%*	*n*	*%*
<1	6	14	8	17
1	9	21	10	21
2	7	16	13	28
3	12	27	6	13
4	6	14	5	11
5	3	7	5	11
6	0	0	0	0
>6	1	2	0	0
Median	3.5 hours		3 hours	

A Shapiro-Wilk test showed a significant departure from normality, for both the Forest School group W(44) =0.94, p=.019 and the comparison group W(47)=0.91, p=.002; therefore a non-parametric test was chosen. A Mann Whitney U Test suggested there were no statistically significant differences between groups, U=930, p=.401. Median hours accessing the curriculum was 3.5 hours in the Forest School group (IQR=2), with the mode being 3 hours. The comparison group had a median of 3 hours (IQR=2) and a mode of 2 hours. When limited to parents of children who had participated in Forest School for a period of 6 months or more, the difference between the totals, was also not statistically significant, when the Mann Whitney U Test was applied, U=458, p=.632.

Table 6:
On average, how many hours per day did your child spend accessing learning outside of the school curriculum/work set by school at home? (For example, activities and games that you feel helped your child learn skills and abilities that will help them in their future education but that was not set by your child's school).

Number of hours	Forest School		Comparison Group	
	n	*%*	*n*	*%*
<1	2	5	10	21
1	14	33	14	30
2	19	44	12	26
3	4	9	8	17
4	2	5	2	4
5	1	2	1	2
6	0	0	0	0
>6	1	2	0	0
Missing	1	2	0	0
Median	2 hours		1 hour	

A Shapiro- Wilk test showed a significant departure from normality, for both the Forest School group, $W(43)= 0.80$, $p<.001$ and the comparison group, $W(47)= 0.91$, $p=.001$.

A Mann Whitney U Test suggested there were no statistically significant differences between groups, $U=859.5$, $p=.205$. Median hours accessing learning activities, outside of the curriculum, was 2 hours (IQR=1) in the Forest School group, with the mode also being 2 hours. Median hours in the comparison group was 1 hour (IQR=1) with the mode also being 1 hour.

When restricted to parents of children who had participated in Forest School, for a period of 6 months or more, the difference between the totals, was also not statistically significant when the Mann Whitney U Test was applied, $U=376.5$, $p=.107$.

Table 7:

How many hours per day did your child spend learning independently, for example without an adult sitting with them?

Number of hours	Forest School		Comparison Group	
	n	%	*n*	%
<1	14	32	25	53
1	13	30	9	19
2	11	25	8	17
3	3	7	1	2
4	1	2	4	9
5	2	5	0	0
6	0	0	0	0
>6	0	0	0	0
Median	2 hours		1 hour	

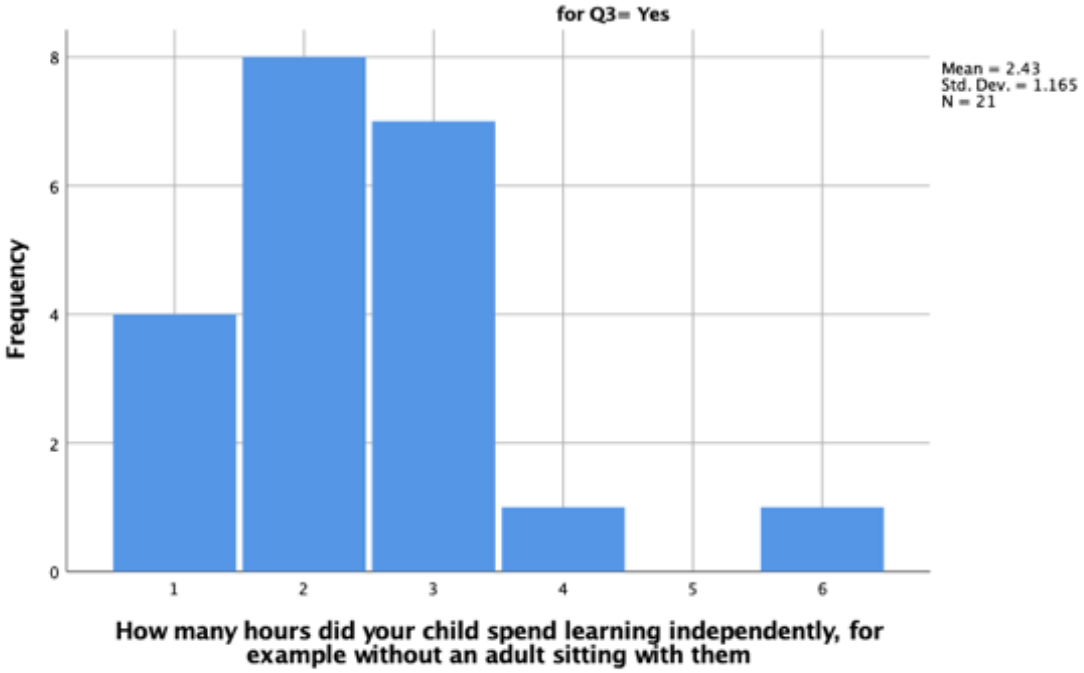
A Shapiro Wilk test showed a significant departure from normality for both the Forest School group, W(44)= 0.84, p<0.01 and the Comparison Group, W(47)=0.74, p<.001. A Mann Whitney U Test suggested there were no statistically significant differences between groups *(*U=825, p=.08). Median hours spent learning independently was 2 hours (IQR=2) in the Forest School group, with the mode response being less than 1 hour.

Median hours spent learning independently in the comparison group was 1 hour (IQR=2) with the mode being < 1 hour.

However, when the Forest School group was limited to children who had participated for at least 6 months, a statistically significant difference between groups was found, U=345.5, p=.038, η^2=.06 The Forest School group (Mdn=2), spent more time learning independently than the comparison group (Mdn=1). The effect size was small but present (<.06 is classified as small); with 6% of the variability in the ranks being counted for by whether the child had participated in Forest School programme. It is therefore still possible there was no effect/difference between groups and that the p value reflected the large number of tests used within the study (Type I error). When the p value is set to 0.05 for significance there is a 5% probability of rejecting the null hypothesis (that there is no difference between groups) when it is in fact true; this may have happened here.

Figure 5

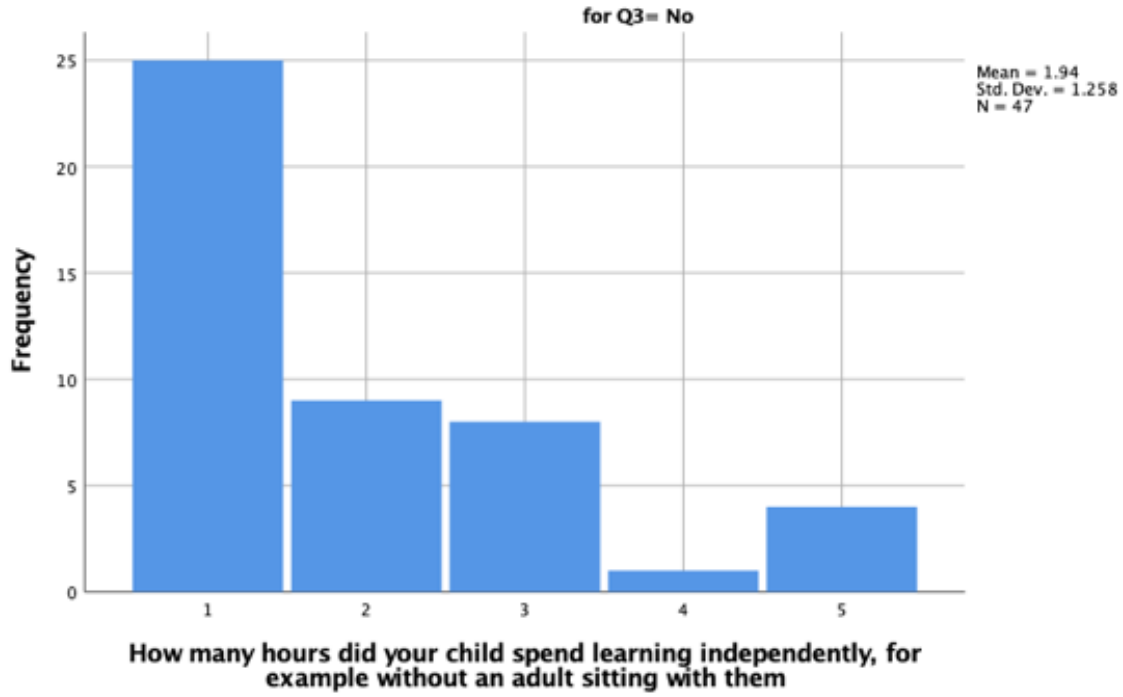
Forest School group



Note: Forest School group limited to those who had participated for six months or more. Graph captures number of hours per day child in limited Forest School group spent learning independently.

Figure 6

Comparison group



Note: Comparison group: graph captures number of hours per day child spent learning independently

Table 8

How often did your child come up with their own learning activity during this period? They can have carried this activity out on their own or with others but must have come up with the activity themselves. Please choose the closest response.

Frequency	Forest School		Comparison Group	
	n	*%*	*n*	*%*
Daily	10	23	9	19
2 times a week	9	21	10	21
Once a week	12	27	7	15
Once a fortnight	2	5	4	9
Once a month	2	5	1	2
Almost never	6	14	12	26
Never	3	7	4	9

A Shapiro Wilk test showed a significant departure from normality for both the Forest School group, W(44)=0.87, p<.001 and the comparison group, W(47)=.0.87, p<0.001.

The mode response for the Forest School group was '*Once a week'* for creating their own learning activity and the mode for the comparison group was '*Almost never'*. A Mann Whitney U Test suggested there was no statistically significant difference between the groups' responses, U=915, p=.336.

When restricted to parents of children who had participated in Forest School for a period of 6 months or more, the difference between the totals, was again not statistically significant, when the Mann Whitney U Test was applied, U=423.5, p=.345.

Table 9

On average, how many hours a week did your child spend learning in an outside space during this period? (This doesn't have to be based on the school curriculum but where you felt that they were learning)

Hours	Forest School		Comparison Group	
	n	%	*n*	%
0	4	9	2	4
1	4	9	2	4
2	0	0	7	15
3	4	9	6	13
4	2	5	5	11
5	3	7	2	4
6	4	9	1	2
7	2	5	2	4
8	4	9	1	2
9	0	0	1	2
10	7	16	6	13
11	0	0	1	2
12	0	0	1	2
14	0	0	1	2
15	1	2	3	6
21	1	2	0	0
28	1	2	0	0
30	2	5	0	0
Missing	5	11	6	13

Data was discrete and 'categories' created for the purpose of the frequency table, were from responses inputted into a free text box. Responses that were not listed by any participant e.g. 13 hours, are not listed in the table.

A Shapiro Wilk test showed a significant departure from normality for both the Forest School group, $W(39)=0.78$, $p<.001$ and the comparison group, $W(41)=0.90$, $p=.001$. A Mann Whitney U Test suggested there was no statistically significant difference between the group totals, $U=734.5$, $p=.530$. The mode for the Forest School group was 10 hours per week and for the comparison group, 2 hours per week.

When restricted to parents of children who had participated in Forest School for a period of 6 months the results of the Mann Whitney U Test were still not significant *(*$U=388$, $p=.981$)

Table 10
How difficult did you find it educating your child during this period?

Difficulty	Forest School		Comparison Group	
	n	*%*	*n*	*%*
Extremely easy	1	2	2	4
Somewhat easy	6	14	5	11
Neither easy nor difficult	10	23	7	15
Somewhat difficult	16	36	17	37
Extremely difficult	11	25	15	33
Missing	0	0	1	2

A Shapiro Wilk test showed a significant departure from normality for both the Forest School group, W(44)=0.89, $p<.001$ and the comparison group, W(46)=0.85, $p<.001$. A Mann Whitney U Test suggested there was no statistically significant difference between the group's responses, $U=916.5$, $p=.421$. The most mode response in both groups was that parents' experience of educating their child, was 'somewhat difficult'. When restricted to parents of children who had participated in Forest School for a period of 6 months or more the results of the Mann Whitney U Test were still not significant *(*$U=407$, $p=.282$).

Table 11
How do you think your child found learning during this period?

Difficulty	Forest School		Comparison Group	
	n	*%*	*n*	*%*
Extremely Easy	2	5	1	2
Somewhat easy	5	12	5	11
Neither easy nor difficult	13	30	9	19
Somewhat difficult	18	42	19	40
Extremely difficult	5	12	13	28

A Shapiro Wilk test showed a significant departure from normality for both the Forest School group, W(44)= .89, $p<.001$ and the comparison group, W(47)=0.87, $p<.001$. A Mann Whitney U Test suggested there was no statistically significant differences between the groups totals $U=798.5$, $p=.072$. The mode response for the Forest School group and the comparison group was 'Somewhat difficult'. When restricted to parents of children who had

participated in Forest School for a period of 6 months or more, the results of the Mann Whitney U Test were still not significant *(U*=356, *p*=.099).

Table 12
How well do you think your child managed their emotional wellbeing/emotions during this period?

How well	Forest School		Comparison Group	
	n	*%*	*n*	*%*
Extremely well	6	13	9	19
Very well	15	34	12	26
Somewhat well	11	25	12	26
Not so well	9	21	11	23
Not well at all	3	7	2	4
Missing	0	0	1	2

A Shapiro Wilk test showed a significant departure from normality, for both the Forest School group, W (44)=0.91, *p*=.002, and the comparison group, W(46)=0.90, *p*=.001. The mode response for the Forest School group was 'very well' and for the comparison group 'very well' and 'somewhat well'. A Mann Whitney U Test suggested there was no statistically significant difference between the group's responses, *U*=993.5, *p*=.878. When restricted to parents of children who had participated in Forest School for a period of 6 months or more the results of the Mann Whitney U Test were still not significant, *U*=479, *p*=.956.

Table 13
How well do you feel your child was able to concentrate on learning tasks during this period?

How well	Forest School		Comparison Group	
	n	*%*	*n*	*%*
Extremely Well	1	2	4	9
Very Well	6	14	4	9
Somewhat well	22	50	12	26
Not so well	10	23	16	34
Not well at all	5	11	11	23

A Shapiro Wilk test showed a significant departure from normality, for both the Forest School group, W(44)=0.88, p<.001 and the comparison group W(47)=0.88, p<.001. The mode response for the Forest School group was 'Somewhat well' and for the Comparison group it was 'Not so well'. A Mann Whitney U Test suggested there was no statistically significant differences between the groups' responses, U=833.5, p=.096. When restricted to parents of children who had participated in Forest School for a period of 6 months, the results of the Mann Whitney Test were still not significant, U=426.5, p=.354.

Table 14

How well do you feel your child was able to co-operate with other people in your household during this period?

How well	Forest School		Comparison Group	
	n	%	*n*	%
Extremely Well	6	14	10	21
Very Well	18	41	12	26
Somewhat well	14	32	16	34
Not so well	6	14	8	17
Not well at all	0	0	1	2

A Shapiro Wilk test showed a significant departure from normality for both the Forest School group, W(44)=0.88, p<.001 and the comparison group, W(47)=0.90, p<.001. The mode for the Forest School group was 'Very well' and for the Comparison group 'somewhat well'. A Mann Whitney Test U suggested there was no statistically significant differences between the groups' responses, U=990.0, p=.716. When restricted to parents of children who had participated in Forest School for a period of 6 months or more, the results of the Mann Whitney U Test were still not significant U=467, p=.714.

For the Forest School group only, parents were also asked 'Was there anything that your child learned in Forest School that helped them during this period?' with a free text response box. Thirteen parents did not put any response, six parents responded 'No' and one parent

'yes'. In addition, two parents also reported they were unsure, as their child didn't talk about Forest School. Of the remaining 22 responses, responses were grouped into categories and are listed below; comments mentioned multiple categories.

Table 15

Was there anything that your child learned in Forest School that helped them during this period?

Theme	Nº of responses where discussed *(n=22)*
Enjoyment being or exploring outdoors	8
Den building	4
Interest in Gardening/vegetable patch	4
Appreciation/respect for outdoors	4
Learning and talking about nature	4
Learning outside	2
Creative crafts	2
Play outside/nature play	2
Independent learning	1
Enjoying outdoor activities	1
Combining school work with house chores	1

4.3: Introduction to Qualitative Data

This section reports four separate analyses of the qualitative data, that contributed to the study. It includes two analyses of data gathered from parent interviews and two from interviews with children. Each is split into that which discussed perceptions and experiences of Forest School, and that which discussed perceptions and experiences of home learning, during the COVID-19 pandemic. This was to enable a comparison between participant's experiences in both settings and to see whether there were any commonalities between the Forest School setting and the home learning setting.

The overarching themes will be introduced, followed by an outline of each theme that corresponds to them and where helpful, further expansion with sub-themes (in single

quotation marks). Interview excerpts will be presented (in italics and double quotation marks), to provide evidence for each theme and/or sub-theme. Participants identifying codes are noted in brackets following the extracts e.g. (Parent 1).

Where there are a large number of themes within an overarching theme and where the overarching theme is particularly salient in the data, this will also be presented pictorially as a thematic map. The process underpinning the thematic analyses has been previously outlined in the methodology chapter. Examples of the coding process are listed in the appendices, for further transparency of the data gathering and analysis process.

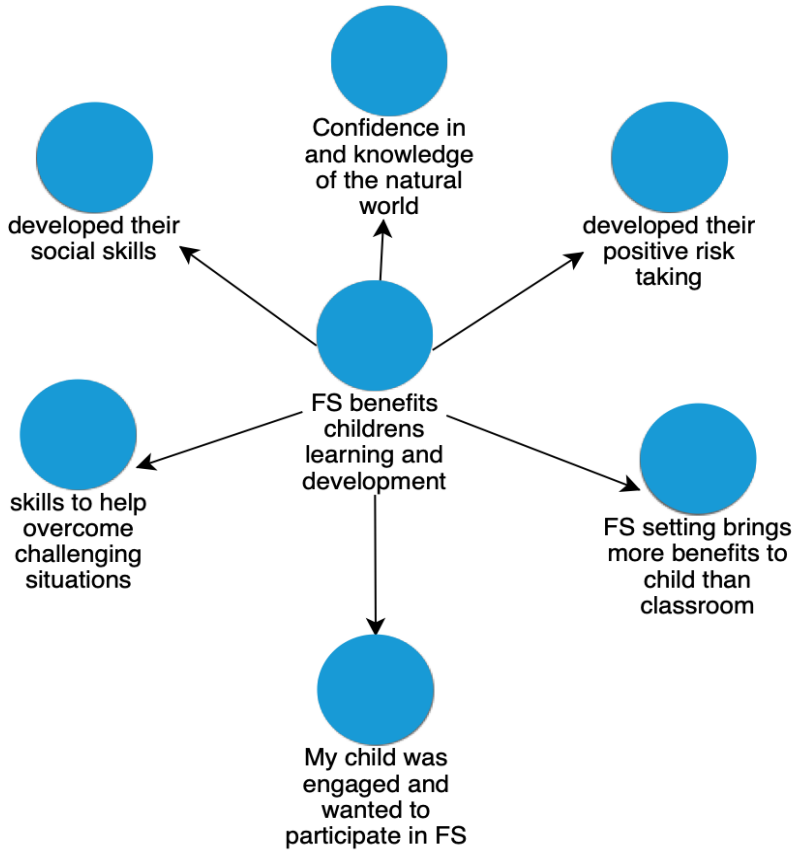
4.4: Thematic Analysis

4.4.1: *Parents' Forest School Data*

Overarching Theme 1: Forest School benefits children's learning and development

The first overarching theme, arising from parent interviews, was that parents felt their child had benefited from participation in Forest School. The thematic map, with corresponding themes, provides a visual representation of the ways in which parents felt their child benefited.

Figure 7
Benefits of Forest School



Note: Overarching Theme 1 and interrelated themes from parent data.

Theme 1: Forest School setting brings more benefits to the child than the classroom environment.

A theme that occurred across all five parent interviews, was that there was something significant about the benefits gained, from being in a woodland environment, that a child would not be able to get within the school classroom. It was also noted, although to a lesser extent, the activities that Forest School provided, offered something the child would not be able to get, within the school classroom.

Subthemes within this included: the ‘child’s learning being better in the natural environment’, with the natural environment being more engaging and stimulating than the classroom. For example:

“*There’s just not those experiences, I don’t know bringing in a worm or wormery into a classroom, into that kind of stagnant environment, to seeing them outside in the natural environment and seeing them wriggling through the mud and the types of things they will see. Or having a tank with fish in or a tank with frog spawn in, I think it’s completely different to looking at them out in a natural stream or forest to see*” (Parent 3)

As well as the environment parents also noted that the activities in Forest School were engaging and ‘spoke positively about them’; this was therefore generated as another subtheme. A parent noted:

“They make it as rich as possible in terms of the things they can do. There is logs for them to walk along, as I said, they have the tyre swing. They have a mud kitchen, a hammock that hasn’t been put up yet, they need to put that up, a digging area, a bug hotel...” (Parent 1)

A further subtheme described by parents was that they felt that it was easier for children to be engaged and learn in Forest School because there was ‘less academic pressure’. Parents felt this pressure existed in school and evoked anxiety and made it harder for some children to learn. One parent, who had one child that had participated in Forest School and one that hadn’t, reported she wished both her children had attended Forest School:

"...you know he suffered a lot with anxiety at school. If he had something like this, where he was going into school knowing he didn't have to go into a classroom and learn, he was actually outside to do something really fun and still learn. I think it would have helped him a little bit more..." (Parent 5)

Additional subthemes also generated from parent perceptions of being outside in the forest including: 'good for children's physical health' ***(***giving them opportunity for exercise) and 'a space to feel free' and run around within a safe environment. For example:

"*She (the Forest School practitioner) would tie red flags around the trees and she couldn't go beyond them. They knew the boundaries, so they could then run wild but they knew where the boundaries were as the adult would hover around those edges". (Parent 4).*

Theme 2: Confidence, connection to and knowledge of the natural world.

All five parents discussed some aspect of this theme, with four out of the five parents specifically talking about their child becoming 'confident in the woodland' and showing a sense of pride in their Forest School setting. One parent noted:

"She was like, 'this is my territory now' and she was showing me around. To have that, it's quite empowering, to have that 'this is my area, I know this really well', and she could see that I was really impressed. She was like 'welcome to my world mum.' " (Parent 2).

One parent also spoke about Forest School increasing her child's sense of connection to nature more generally, rather than specifically to the woodland.

Parents also felt that Forest School helped children 'learn about the natural world', in particular their nature vocabulary. With parents feeling that Forest School gave a rich environment for children to learn about, be engaged with and want to talk about. Parents discussed the opportunity to learn about plants, creatures and the changing seasons.

"You know he has a really lovely vocabulary, and he wouldn't think of anything of trying to describe what is around him and vocabulary and plants and what they are, he has sort of developed that, so I know that's a big part of it." (Parent 5)

Theme 3: Development positive risk taking.

A theme that was discussed in four out of the five interviews, was around Forest School helping children to know how to safely participate in risky activities and risky play. This was largely in terms of physical risk, with subthemes including 'helping my child to become physically braver', such as through climbing trees and navigating the forest environment, 'helping my child to have a go', helping them become 'skilled in using tools', such as knives and axes, and finally 'learning how to be safe around a fire'. Parents discussed how the 'rules kept children safe at forest school' and because children were able to pay attention to and follow these rules, they were able to participate in these activities.

"She'll be the one to say, don't forget forest school rules. Walking around the fire and things like that." (Parent 4)

One parent's quote in particular, highlighted how beneficial she felt this opportunity was for her child:

"So the risks that they can take and the rewards that come from taking risks and facing your fears, and sometimes realising that you can do something that you thought you couldn't do" (Parent 1)

Theme 4: Developed their social skills.

Although not discussed as regularly by parents as positive risk taking, the development of social skills, was still discussed in four of five parent interviews. Parents largely referred to the development of children's interactions with peers, although one parent did feel that forest school allowed her child to 'learn how to interact with the community', as the Forest School took place in a local park. Other subthemes mentioned by parents included: 'building confidence in social situations', 'learning how to work in a team' and 'building their prosocial skills', with children ensuring they were looking out for others in the Forest School. Two parents noted the following about Forest School:

"The social stuff is really important; they have a lot of fun and a lot of respect for each other." (Parent 2)

"I think because the groups were muddled up and they weren't always with their closest friends, it kind of forced them into a situation where they would have to talk to children they wouldn't normally talk to." (Parent 4)

Four parents highlighted how they felt one of the underlying reasons that the programme helped develop these skills, was because the approach taught children to have 'an inclusive mind-set'. They felt all abilities, backgrounds and in some cases ages, worked together in Forest School.

Theme 5: Builds skills to overcome challenging situations.

Three parents perceived that their child had developed this skill and confidence, following attendance at Forest School. Parents felt that Forest school helped their child 'develop perseverance', to keep going when something was difficult. They also felt it helped them have the belief in themselves, that they could overcome a difficulty ('helps build confidence in themselves'). In addition, they felt it enabled them to be 'autonomous thinkers', so they were more likely to know how to look after themselves independently and to know when it was necessary to ask for help. One parent also felt that it helped 'develop resilience' and helped develop the tools to overcome emotional, as well as physical challenges.

"Yeh she's definitely a fighter, we're having to tone that down because she, it's funny she's very confident, I think she's always been quite confident, and I do feel like the Forest School has helped with that" (Parent 2)

Theme 6: My child was engaged and wanted to participate in Forest School

All five parents discussed enjoyment that their child got from particular aspects of Forest School, but three parents in particular, mentioned this theme explicitly, noting how much their child looked forward to Forest School each week and wanted to participate. One parent noted the following:

"They always look forward to it every week, 'is it a Mummy day today' because they would go with me and they would ask is it Forest School. And after going it would be something that was a clear enjoyment in their week. If they didn't go, they would be disappointed with not going". (Parent 3)

Although a desire to participate doesn't necessarily directly lead to children's learning or development, being motivated to engage in Forest School sessions would mean children were more likely to be attending to and therefore gain something from, any of the learning opportunities that were presented in the sessions. Therefore, this theme was still seen as relevant to the research question and included here.

A less salient theme, although still mentioned by two parents, was around Forest school supporting children to develop their attention and engagement. Parents discussed how Forest School 'helped develop listening and attention skills', partly because the outside environment was more engaging but also because the dangers that existed within Forest School (such as fire), meant it was vital that they listen to adults. One of the parents even noted that their child's development in listening had been mentioned in school reports.

"I think it definitely developed his listening and that came through in his reports from reception to year one or year two." (Parent 5).

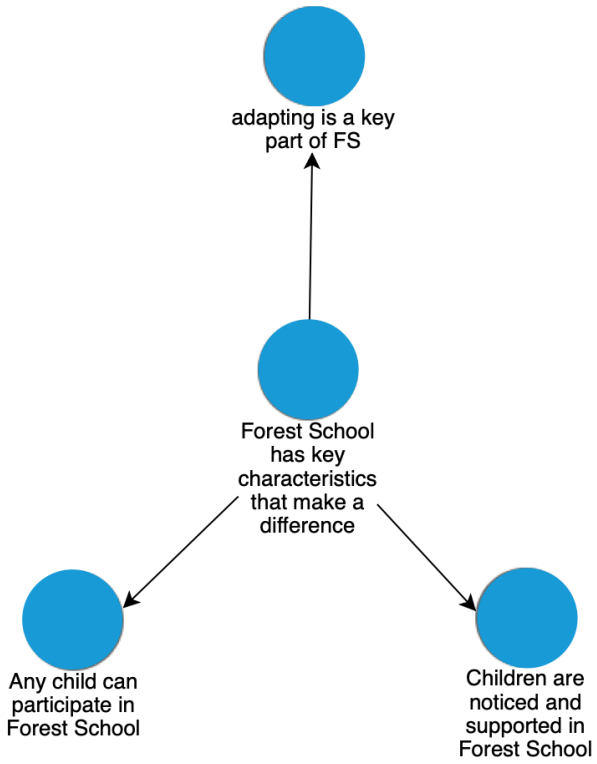
Overarching theme 2: Forest School has key characteristics that make a difference

Although in some instances this was coded latently, or discussed more implicitly, some parents did explicitly mention there was a set way to do Forest School and key characteristics present to all Forest Schools. In the latter instances parents quoted the Forest School Association principles and described how they felt that Forest School was set apart from outdoor learning. The interviews appeared to create a picture of their child's experiences of Forest School and the commonalities that occurred between them. This was included in the

presentation of the findings as parents felt these characteristics contributed to the change that took place in children's learning and development when they participated in a Forest School.

Figure 8

Key characteristics that make a difference in FS



Theme 1: Adapting is a key part of Forest School.

This was a prominent theme that appeared in four of the five interviews. Parents spoke at length about how 'children are required to adapt to the seasons at Forest School'. Some parents did report this as a concern, rather than a benefit and that they were concerned about their child *"being outside in extreme conditions"* (Parent 2), before their child started. These parents reported this worry reduced with time and they felt less worried after their child had spent a winter at Forest School and there had been no problems. Parents also discussed there being a requirement to buy their child the appropriate seasonal clothing, before they started, to help them manage the weather. The excerpts below, highlight the adaptability parents perceived their child needed in Forest School:

"The changing conditions and how you have to adapt. Just having experienced it together. You're learning about yourself as well, because you know this is a human experience. So, we all need to learn to cope." (Parent 2)

"The time of the year and the flow of the water and how dry it is, or how muddy it is. So, I think outdoor learning, Forest School, is more beneficial. If it rains, they have to deal with it, they can't just run indoors." (Parent 4)

Parents also appeared to perceive the Forest School practitioners as adaptable, modelling this skill to their children:

"They are always very quick to adapt things; you know with the weather. In their final thing, where they had biscuits and chocolate and marshmallows and it was pouring with rain, so they all sat on the bus and had it." (Parent 5)

"They put tarps up. You know I've just been so impressed with how they navigate all that. They're really good at knowing how to cope and look after them, you know they make shelters." (Parent 2)

Theme 2: Children are noticed and supported in Forest School.

Four of the five parents discussed the benefit of a higher adult to child ratio that was present in their child's Forest School (e.g. *"the class would be divided into 3 so it was a group of 10 per session":* Parent 4)

One parent felt the following:

"*There's just so much more time in Forest School, whereas in the classroom teachers have so many boxes they need to tick and so much going on, there's not the time to give to the children"* (Parent 1).

However, another parent noted, even with the increased attention from adults, children were still encouraged to be free (a benefit that had been highlighted in the first overarching theme).

"There's a good balance between being more supported in this group, to get more contact time but you also get more freedom as well, which is really helpful." (Parent 2)

One parent also felt that the power differential between adults and children was less in Forest School, compared to the classroom. She felt "*There's no kind of hierarchy between the children and the grown-ups. Everybody is respected, in exactly the same way*" (Parent 1).

Overall parents appeared very happy with the adults at Forest School and the balance between independence and support.

Theme 3: Any child can participate in Forest School

All five of the parent interviews mentioned some aspect of this overarching theme, in their interview, although less frequently than the other overarching themes. Even though several parents discussed how their child had started Forest School at a young age, parents felt that Forest School wasn't only for one particular age group, or child with a particular ability.

"I think Forest Schools work from 0-19, from all ages and all stages and levels of learning. I don't think there are academic skills needed as such, you can still find enjoyment out of the natural world and learn from it, regardless of your levels of learning." (Parent 3)

"*I can't honestly think of one individual group that wouldn't benefit from it. I honestly think all children, all abilities*." (Parent 5)

"*I don't know if there are other particular groups. I just wish that all kids could do it you know. I think it's important socially, but I think it stems from them being more confident in themselves*" (Parent 2).

Two parents also discussed specifically how it might help some groups of children even more, such as those who struggle with attending in the classroom environment, those that experience anxiety in school and those that lack confidence.

"I think that it benefits all children, especially those where the classroom environment doesn't work for them. Therefore, if they prefer to be outside their levels of anxiety or arousal will be less than if their somewhere inside. And their ability to run, I think the ability to move" (Parent 3).

"I do think those that lack confidence or social skills, even children with Social and Emotional Mental Health needs or behavioural needs, you know quite lively. I just think having these activities where they are really hands on." (Parent 5)

All five of the parent interviews mentioned some aspect of this overarching theme, in their interview, although less frequently than the other overarching themes

4.4.2: *Parents- Home Learning Data*

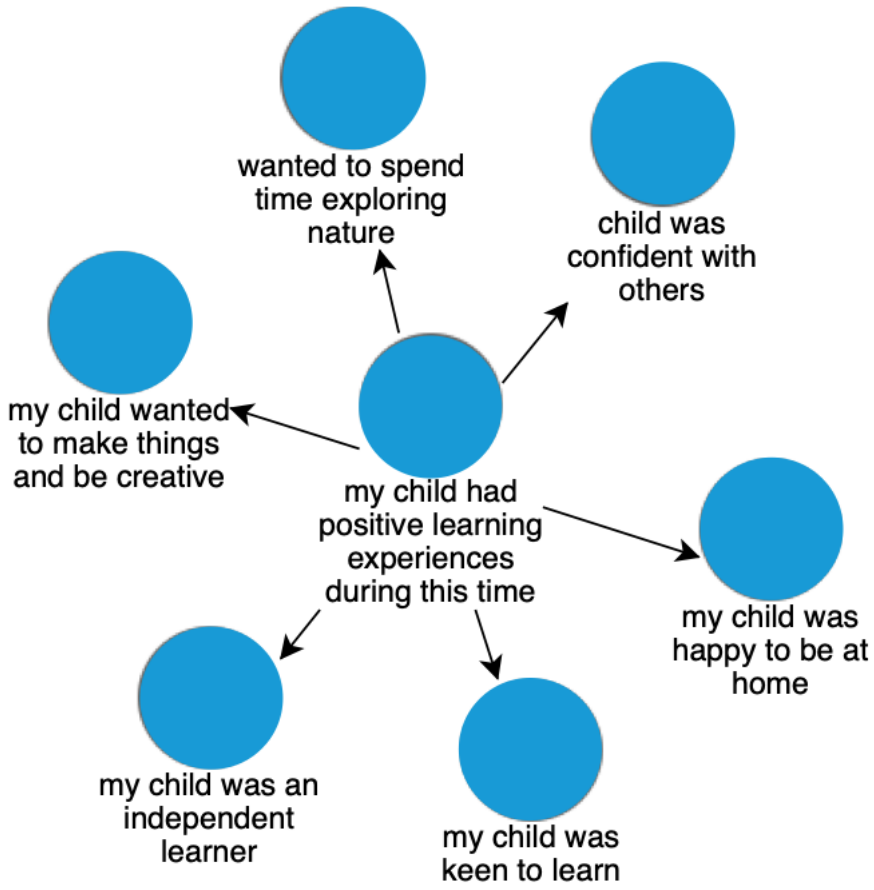
This data was collected in order to gain an understanding of what children who had previously participated in a Forest School, home learning experiences were like. It was also collected to see whether there were any commonalities (or skills generalised) between the Forest School and Home learning settings for this group of children.

Overarching Theme 1: My child had positive learning experiences during this time.

The most frequent overarching theme was parents' perception that their child had experienced positive home learning experiences, during the COVID-19 school closure period. In some instances, this was accompanied with a narrative of parent surprise, parents thought their child would struggle during this period but did surprisingly well to manage such a change, from full time schooling.

The thematic map, with corresponding themes, provides a visual representation of why parents felt this was a positive experience for their child.

Figure 9:
Positive Home-Learning Experiences



Note: Overarching Theme 1 and interrelated themes from parent data.

Theme 1: My child was an independent learner.

Four of five parents spoke about their child being comfortable with learning independently during this time. This occurred across the age range, from pre-school to Year 6 children. Some parents noted this was due to unavoidable work circumstances, such as being on a video call, that their child needed to work alone and didn't have a choice in the matter. However, they felt their child rarely raised objections to this and in the end, this was a useful skill for their child to learn. For example:

"Kind of ticking along, probably done her good in that sense of independence and you know, having to get on with sorting herself out while we're working."

(Parent 4)

"*I just found he was quite good at independently finding things, like that he wanted to do. Quite a good independent learner.* "(Parent 1)

Theme 2: My child was keen to learn.

Three parents reported that their child was motivated to learn during this time and was curious to know more about particular topics, whilst at home. Two parents reported their child was often keen to know what words unknown to them, meant.

"He'll ask questions you know, 'how can I...,' 'what would be a good word', you can see he's thinking, how can I describe that". (Parent 5)

"*She's very curious and she wants to learn, she wants to do stuff all the time*" (Parent 2)

Theme 3: My child wanted to make things and be creative.

All five parents noted examples of their child making things and being creative. Although parents noted they were unsure whether their child would have been like this, regardless of participation in a Forest School, two parents did note examples of creative activities, that they felt had been influenced specifically by Forest School.

"They did generalise out some of them, so for example if it was muddy they would be, we have the sheets set out and we paint with mud at home and things like that" (Parent 3)

"You know we've built him lots of dens out there, so he has got his own space in the garden and a tent so he loves that." (Parent 5).

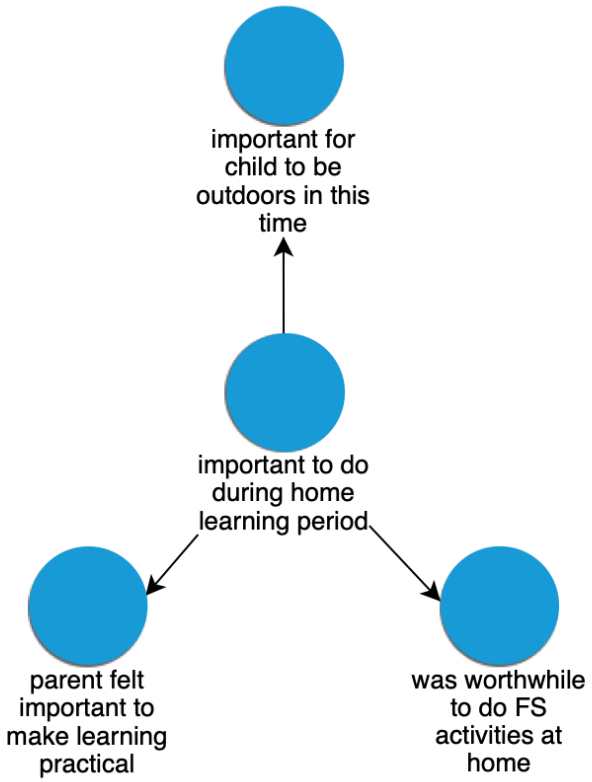
Further themes that were generated, but that were not mentioned as frequently by parents were: my ***child was happy to be home (Theme 4),*** my child was ***confident with others (Theme 5),*** and my ***child wanted to spend time exploring nature*** (***Theme 6)***

Overarching theme 2: It was important for my child to do these things during home learning.

All parents discussed things that they felt were important to do during their child's home learning period. As parents noted that Forest School was outside, practical and had programme specific activities, parents also felt that children's home learning experiences should include these things also. Themes are shown below with example extracts.

Figure 10

Important for home learning



Theme 1: Was worthwhile to do Forest School activities at home.

Four parents discussed their child wanting to do, and subsequently doing, Forest School activities at home. Parents did not specify whether they had intended these to be learning activities. Activities included: building dens, using a mud kitchen and in one instance, toasting marshmallows on an outside fire.

Theme 2: Important for child to be outdoors in this time.

Parents discussed the importance of being outside, often feeling it was something their child wanted and also something that helped them to be more engaged in learning. They also felt being outside gave children a richer home learning experience and greater opportunities to develop their language, when exploring the world. The benefits of the outdoors had also been highlighted, in why parents felt Forest School was beneficial to their child.

Two parents reported this was a lot more difficult when it was raining or would have been a lot more difficult if the school closure period had been in the winter, rather than in the summer months.

"*He's alright, it's much easier if we go out and go for a walk and learn that way. It can be hard to… he doesn't really want to sit down and you know"*. "(Parent 1)

"*I think she needed to be outside, definitely had to go outside everyday and be outside*" (Parent 2)

Theme 3: Important for home learning to be practical.

Where parents did come up with activities (rather than activities the child may have chosen to do themselves) parents voiced that it was important for these to be practical, so that their child would be engaged, enjoy them and learn as much as they could out of them. Although in some instances parents created their own activities, parents also described adapting work, on the school curriculum in this way.

"I tried to make things as practical as possible, so whatever it was I would try and buy resources, you know we would do weighing. I didn't have any of the proper weighing scales so I got some of them from school. So just to say, he is very hands on, he is very practical, that's how he learns better." (Parent 5)

Parents also reported feeling that their child learnt well through play and some of the practical activities, were in a way just their child playing. One parent also felt it was important for her child to learn practical real-life skills, such as cooking, during this time.

4.4.3: *Comparison Forest School and Home Learning Data*

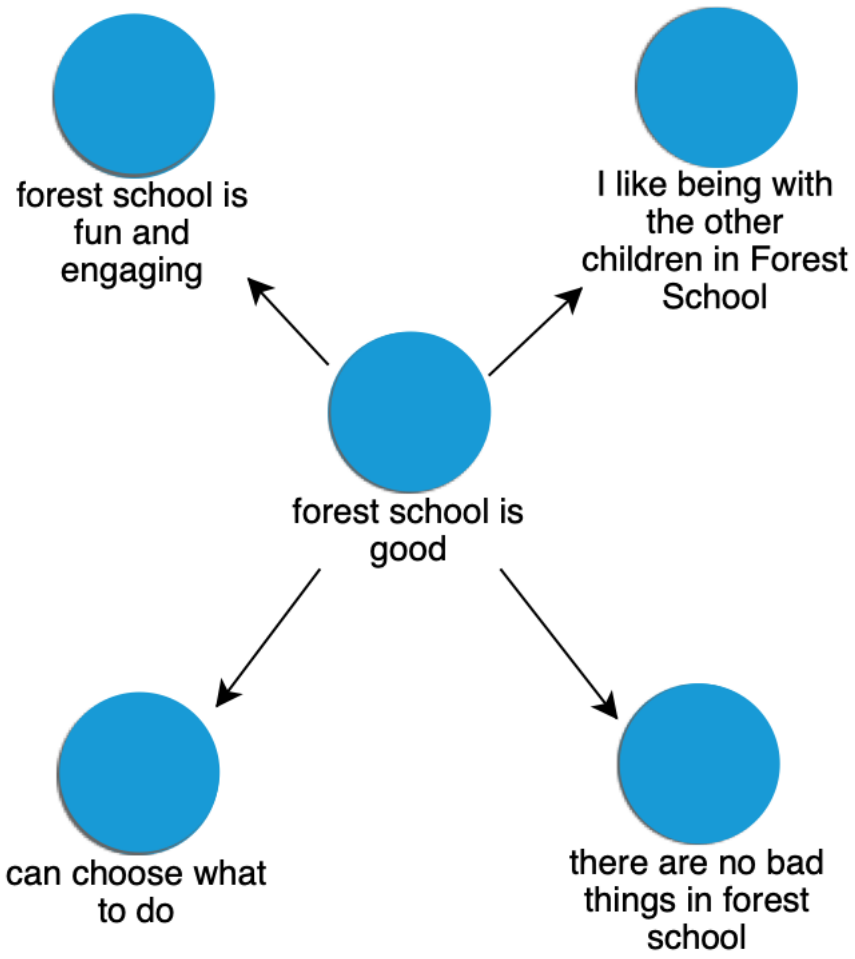
Although parents spoke of Forest School giving rise to benefits, but not of home learning giving rise to benefits, both experiences were reported positively. It appeared parents tried to generalise and adapt what they felt brought benefits in Forest School, to the home environment. They noted that it was important for the child to be outdoors and for home learning to be practical. They also noted being outdoors was the reason why children were often more engaged and benefited more from Forest School. This may have assisted children to be largely settled and happy in both environments and for parents to have reported positive home experiences, even though they also reported the lockdown had made things harder. A further possibility is these positive home experiences may have been assisted by Forest School promoting an adaptive mind-set, that was able to be transferred by children to the home learning environment, although parents did not propose this causation. In addition, parents felt that children were well supported by adults in Forest School. Although development of positive risk taking and social skills was noted in the Forest School data, this did not emerge in the home learning data.

4.4.4: *Children's Interviews: Forest School Data*

In order to triangulate the findings, children were also interviewed about their experiences. In all instances, the children that were interviewed, all had a parent that had been interviewed, for the parental data set.

Figure 11

Forest School is good



Overarching Theme 1: Forest School is good.

The strongest overarching theme to come out of the children's interviews, was around how positively the children felt towards Forest School. This included: ***Forest School is fun and engaging (Theme 1),*** with children saying how much enjoyment they got from Forest School, how much they loved the activities and that they were never bored. Children recalled being happy when at Forest School, particularly when they had chance to play during their

time in Forest School. There was also: ***There are no bad things in Forest School (Theme 2),*** with children not wanting to change anything about their Forest School experience

Examples of these themes are seen below:

Interviewer: "Was there anything you didn't like about forest school?"

Child 2: "Nope I like everything"

……..

Interviewer: "Did you ever get bored in forest school?"

Child 4: "Definitely not"

Interviewer: "Do you get bored in normal school?"

Child 4: "Sometimes"

Although as discussed enjoyment of and engagement in, an activity, does not always lead to learning, engagement and wanting to pursue something because it is enjoyable are useful foundations for learning to be able take place (Meece, Anderman, & Anderman, 2006). A United States study also found that classroom engagement and wanting to learn because it is interesting and enjoyable (intrinsic motivation), in the fifth grade were predictors of later reading achievement in the 8th grade, even after controlling for fifth grade reading achievement (Froiland &Oros, 2013). This theme was therefore seen as helpful in answering the research questions, particularly what it is about Forest School that may make a difference, if learning is taking place and was therefore included in the results.

Theme 3: You can choose what to do in Forest School.

Four of the five children discussed the sense of freedom and independence they got from Forest School, from being able to choose what activities you do and, in some instances, who you worked with. Children talked about adults helping them where needed, such as when

participating in activities that involved risk, but the way this was spoken about, suggested children saw this in a supportive, rather than directive manner.

"You kind of don't have to stick to what your being told and do your own activities with your friends." (Child 4)

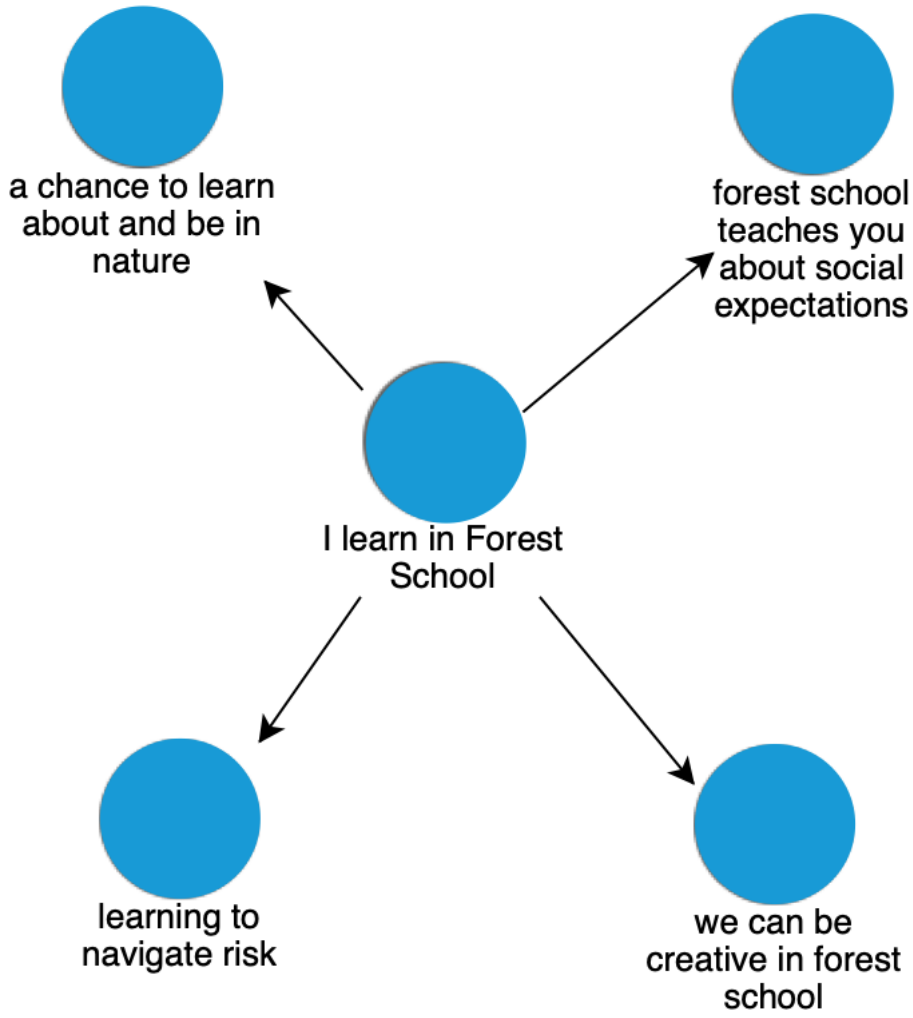
Finally, ***I like being with the other children at Forest School (Theme 4)*** was also generated as a theme, with three children discussing playing and working with others at Forest School. It appeared Forest School gave children the opportunity to work as a group and build relationships. Two of these children noted it was very easy to work with others and make friends in Forest School. Although not directly related to learning, this was included in the findings as positive interpersonal relationships and group cohesion (particularly that of small groups as is the case in Forest School), can optimize children's learning (Haertal, Walberg & Haertel, 1980; Evans &Dion, 1991; Mullen &Copper, 1994).

Overarching theme 2: I learn in Forest School.

All five children discussed things that they had learned and enjoyed learning about/developing skills in, in Forest School.

Figure 12

I learn in Forest School



Theme 1: A chance to learn about and be in nature.

Four children discussed how Forest School had given them the opportunity to learn about and spend time in nature. All children spoke positively about this opportunity and this is captured in the subthemes that were generated: 'I love the mud at Forest School', 'I love the sounds of the Forest' and 'I get to see and learn about animals at Forest School'. For example:

"They've got a frog pond, FROG POND FROG POND! I watch them ribbet" (Child 2)

"Sometimes we had bug hunts I love bug hunts" (Child 2)

"We were trying to dig for bugs this time. We were just trying to put them in the pot and see how many we could find" (Child 1)

Other themes that were found across interviews included: ***learning to navigate risk (Theme 2)*** with two children discussing how they could participate in risky activities but still be safe at Forest School. One child also discussed activities that involved ***learning about social expectations (Theme 3),*** such as waiting your turn and sharing with others. Two other children discussed ***being creative (Theme 4)*** in Forest School and having the opportunity to make things and do drawings. An excerpt evidencing Theme 2 is seen below:

"...How to like climb trees and like because we would each have a bucket that you would turn over and put around the fire, but we're not allowed to go inside the buckets, we have to walk outside them." (Child 4)

Interviewer: "What are the adults like at forest school?"
Child 1: "They're good They help us out...we need a grown up to be able to go on the tyre swing."

Interviewer: "Is that to keep you safe or for something else?"
Child 1: "Yes and if we were going to use the drill as well"

4.4.5: *Children's Interviews: Home Learning Data*

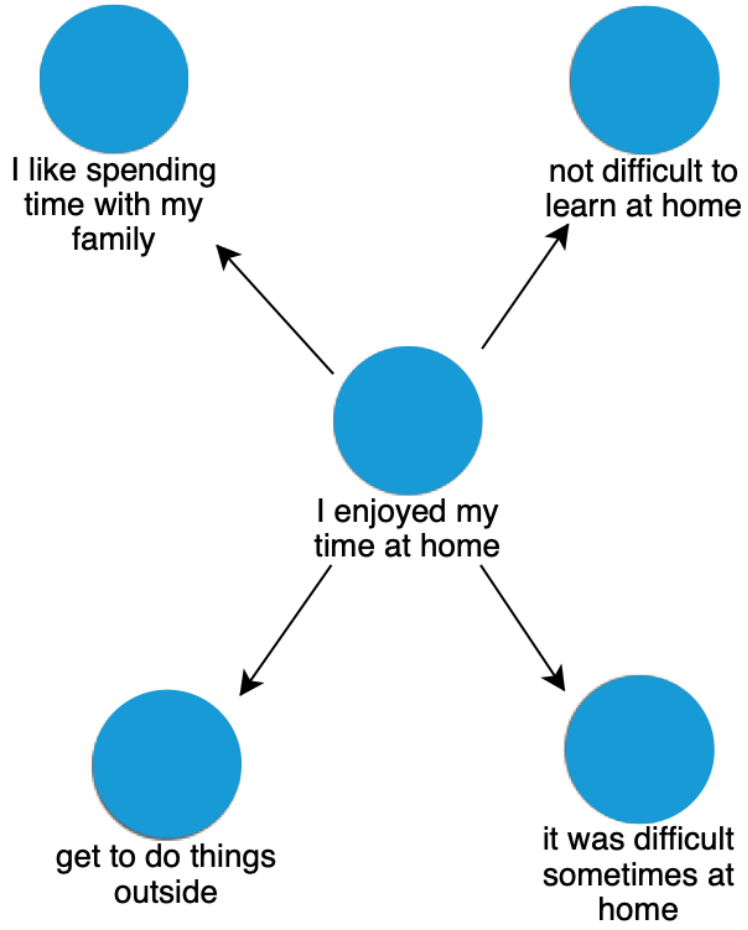
Just as in the parent data, this data was collected in order to gain an understanding of what children who had previously participated in a Forest School, home learning experiences, were like. It was also collected to see whether there were any commonalities (or skills generalised) between the Forest School and Home learning settings for this group of children.

Overarching theme 1: I enjoyed my time at home

Four out of the five children, overall, spoke very positively about their time at home and mentioned few difficulties. The fifth child's views on their experience, was more mixed. They discussed things they had enjoyed whilst being at home, but also discussed finding it difficult at times.

Figure 11

I enjoyed my time at home



Theme 1: I enjoyed doing things outside.

All five children discussed things that they enjoyed doing outside. The majority of these were 'Forest School like activities' although there was a small subtheme of 'being active', which included bike rides for two children and what another child described as PE activities. The Forest School activities that children enjoyed included using a mud kitchen, going to the woods, walking in the mud, climbing trees and hunting for bugs. One child discussed how these activities gave him more things to write about in his home learning.

"If you said bugs, I remember when we went out and bought that thing which you could put all spiders and worms inside and ants. You know ants climb up trees a lot. We had to let the bugs be back in nature. (Referring to using a Bug hotel) I love finding bugs." (Child 5)

Theme 2: I liked spending more time with my family.

Although not always addressed explicitly, three of the children talked positively about the time they got to spend with their family, during the school closure period. As previously discussed, positive interpersonal relationships, particularly that between adult and child can provide the foundations for future learning (Bomber & Hughes, 2013) and has therefore still been included in the findings.

"It was kind of fun because I got to see mummy and daddy and my sister a bit more." (Child 1)

Interviewer: "*What helped you learn?"*

Child 2: "*Mummy by playing with me and tickling me"*

The final theme in this section was ***It wasn't too difficult to learn at home*** (Theme 3) with three children discussing they were able to concentrate and do schoolwork, whilst at home.

However, as noted, one child's experience appeared contrasting from the other's and they found it: ***sometimes difficult to be at home (Theme 4).*** They discussed their family making it harder to learn, due to their siblings being noisy and their parents finding the curriculum content difficult to teach. They also noted that they found it difficult to contact teachers to ask for help and that they missed their friends and school, during this time.

"I prefer going to school. We do have like zoom meetings but I just prefer going to school, I don't know why. " (Child 3)

Overarching theme 3: Who I learned with.

Two themes were generated within this, one that ***learning was with mum (Theme 1)*** with children rarely noting they carried out home learning with fathers. For example:

"Who did you do your learning with? Mummy the most, daddy not" (Child 5)

"I was normally with my mum, my dad was normally on a work call or something." (Child 3)

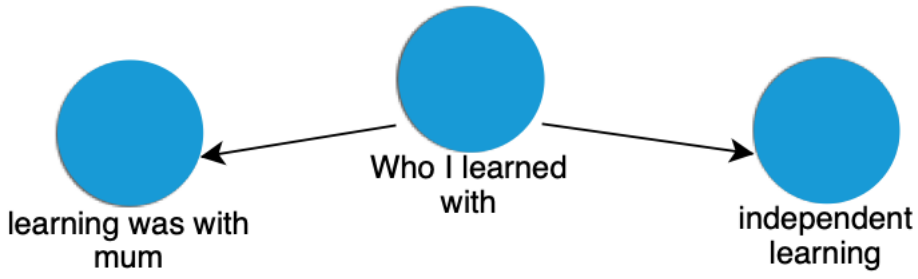
The second theme was around children ***learning independently (Theme 2)***

This was not discussed as frequently as it had been noted in parent interviews, but two children did discuss regularly learning, without their parents present.

"A lot of it was on my own and some of them I done with mummy." (Child 1)

Figure 14

Who I learned with



4.4.6 *Comparison Forest School and Home Learning Data*

Although children discussed at greater frequency, the enjoyment they got from Forest School, the majority of children also discussed enjoying their time at home. Many of the activity's children discussed enjoying in Forest School, children also often mentioned doing at home. Understandably, whilst children briefly discussed things that came from being with other children in Forest School, this did not occur in the home learning data, but instead, some children discussed enjoying the additional time they spent with their family. In addition, the chance to be independent and free, was a stronger theme in the Forest School data, although some children did discuss learning independently, some of the time in the home learning data, with the rest of the time spent learning with mum.

4.4.7 *Comparison Parent and Child data*

Whereas parents largely focused on the skills they felt their child learnt and developed at Forest School, children themselves tended to focus on what they enjoyed doing at Forest School. With regards to home learning experiences, both children and parents discussed children being independent learners and enjoying being creative and being outside, whilst at home. Many parents focused on there being set criteria of how to do Forest School, whereas even though there were commonalties in children's Forest School experiences (thereby suggesting such set criteria), this was not discussed in the same way, in the child data. In most instances, children appeared to enjoy spending more time with their family, during the COVID-19 school closure period.

4.5 Summary of Quantitative and Qualitative Findings

The analysis of both survey and interview data has been presented here. The quantitative data did not show any significant differences, between groups, for any of the questions when the full sample was analysed. When the Forest School sample was limited to children who had participated in Forest School for 6 months or more, one significant difference was found, with children in the Forest School group, spending more time learning independently, than the comparison group. The theme of children being independent learners, was generated both in parent interview data and in child interview data. This may have been as children interviewed had participated in Forest School for at least 6 months. It also appeared that interview participants had a largely more positive experience than those surveyed, with parents most commonly reporting in the survey, for both groups, that their child had found learning during this period somewhat difficult. In contrast, interview participants felt their child had managed the period surprisingly well and children reported largely positive learning experiences.

For the qualitative findings, it was clear that the Forest School experience was very meaningful for both the children and adults and that there were a number of benefits children received from participation in a Forest School, that parents felt you would not be able to acquire from being in a classroom environment. Possible explanations behind these results and in particular why parents and children felt so strongly that Forest School benefited their learning and development in the interviews, but this benefit was not captured in the survey, will be explored in the next chapter.

Discussion

Overview of chapter

This chapter will reflect on the findings of the research in greater depth, first in relation to the original posed research questions and then in relation to the existing literature. It will then critically reflect on the methodology used in the study and implications for the conclusions that are able to be drawn from the findings. Following this, it will explore the implications of the findings for EPs and wider audiences and then discuss how the research will be disseminated to these audiences. Finally, this discussion will be drawn together with the authors own reflections of the research journey and possible future research directions.

5.1 Summary of Findings in Relation to Research questions

5.1.1: *Q1 What are parents' and children's views on what children learn and how they might develop, following attendance at a Forest School programme?*

This was answered by the qualitative aspects of the study, with the quantitative aspect focusing on the home learning experience. The interview data suggested that both parents (from perceptions of their child) and children themselves, found Forest School a very meaningful and worthwhile programme. In the parent data, there were a number of skills that parents associated with having been created, or broadened, from attendance at Forest School. This included, but was not limited to, increased engagement in the sessions, confidence in and knowledge of the natural world, positive risk taking, social skills and skills to overcome challenging situations. Parents also explicitly noted Forest School brought children opportunities that they couldn't get in the classroom by offering more engaging, practical and meaningful experiences (e.g. such as observing and experiencing natural habits, rather than learning through a worksheet), that were better remembered. Furthermore, they also felt that having to adapt was a key part of the programme. In a minority of instances, some parents

queried whether these skills and interests came from experiences outside of Forest School, such as similar outdoor learning programmes, or their own family values of the importance of being in the woods. However, parents largely associated the benefits discussed in the interviews, from Forest School specifically. Children appeared to focus more on the enjoyment they received from Forest School when interviewed. However, the children also reported experiences that suggested learning. These experiences suggested: learning about nature, learning to navigate risk, a chance to be creative and developing social skills. Children noted a sense of freedom and autonomy in Forest School; this may have led children to feel more comfortable learning independently but whether this skill was developed would need further exploration than that provided by our data. Similar findings from both child and parent data could be argued to enhance the reliability and validity, or trustworthiness, of the data (Noble & Smith, 2015).

Of further interest, both parents and children felt that other children and schools should be encouraged to participate in Forest School. Parents felt these skills and experiences would benefit all children, of any age or learning stage, and that Forest school was a programme that should be considered by all types of educational settings. Again, rather than focusing on what they learnt, children noted they would recommend Forest School to their friends because it was a lot of fun and something most children would enjoy. One child was unsure whether those who didn't enjoy getting muddy would like Forest School. However, one parent also noted her child didn't enjoy getting muddy, particularly initially, but still loved to go to Forest School. The remaining four children felt all children would enjoy Forest School.

Still, the conclusions must be tentative. Some parents noted their child didn't speak at length about their Forest School experience and/or they as a parent had not observed a Forest School

session. Parents *may* have observed differences across time in the home, or from what their child had told them, but it is still difficult to conclude whether these would have occurred from other factors such as typical development. It is also possible that parents' and children's views were susceptible to bias in the study, for example, confirmation bias (Nickerson, 1998). Parents may have had prior views on the importance of outdoor learning before their child started Forest School (as many referenced it was a key aspect of their family life). This subsequently may have led them to pay greater attention to information that suggested Forest school benefited their child, compared to that which suggested it didn't. This bias has been seen in other areas of parental decision making, for example with vaccination literature parents have been seen to be drawn to information that confirmed the beliefs they already held and see information that confirms those beliefs as more credible (Meppelink et al., 2019). For my study this bias could have led parents to pay more attention to articles and narratives that suggest Forest School is beneficial compared to those that suggest there is limited benefit. Further complications arise in identifying the presence of bias, as it is often difficult for individuals to gain insight into when their memory recall has been impacted (Wang & Jeon, 2020). Those coming from a social constructionist standpoint, that is often used in qualitative research, would argue, however, that this is a part of any research, with all individuals making subjective meanings of their experience and it not being ever possible to reduce bias and make findings 'objective' (Creswell, 2009). It is also difficult to determine causality in the findings; many other factors may have contributed to, or have determined, the skills that parents and children perceived had been learnt. The impact of my data being associational, will be discussed at greater length in the limitations section.

Although my conclusions must be tentative with regards to skills learnt, we must not take this to mean we should ignore the findings. As EPs, it is vital to consider the voice of the child,

and to take their views on what is important to them, into serious consideration, such as for their education (The United Nations Convention on the Rights of the Child, 1989). The importance of considering child and parental perspectives in decisions that impact them, such as whether their school adopts a specific programme, is also highlighted in the Children and Families Act (2014). This particular research question aimed to do just that: to explore the voice and views of children and parents' experiences of Forest School and what skills they felt had been learnt. Although a small sample, what we can conclude in regard to this question, is, of the five parents and five children interviewed, all felt they themselves (or their child) had learned a number of important skills from attending Forest School and had learnt things from the experience, that couldn't be achieved in the classroom.

Yet, the results pose a challenge. Along with individuals' experiences, we must also ensure we consider the effectiveness of such programmes (The British Psychological Society, (2019): Competency 6b) and the evidence base (The British Psychological Society, (2019):Competencies 6c, 6h). 'Evidence' and 'Effectiveness' will look different dependent on the epistemological and ontological approach and the purpose of the research, however it is still possible for all approaches to be robust (Forchuk & Roberts ,1993). Within my research, the qualitative findings appear to show some promise towards 'effectiveness', but I must also look to see if the same occurred in my quantitative findings.

5.1.2: Q2 *What skills and areas of learning, that parents and children reported developed from participation in a Forest School, were also seen to be utilised in the COVID-19 home learning period?*

This was again largely captured by the qualitative aspects of the study. Only one question in the quantitative aspect, the survey, asked parents directly what they felt their child learned

from Forest school and implemented during the home learning period. There may have been, therefore, more things that parents within the survey sample felt their child learnt from Forest School, but that weren't implemented during this time. Findings were largely around things that were outdoors, including an enjoyment of being outside, respect for nature, learning about nature, learning outside, an interest in gardening and outside play. Parents also discussed creative crafts and den building. However, half of the Forest School survey sample did not respond to this question. Parents may have felt that the the COVID-19 home learning context was too different to Forest School and that children were unlikely to have generalised skills from Forest School to this environment and therefore didn't answer. If this was the case it would also be more likely for parents to have reported this lack of generalisation within the interview data.

In the interviews, children discussed enjoying doing activities at home during the home learning period, that they had done previously at Forest School. These included: exploring the woods (which involved hunting for bugs, climbing trees and walking in the mud) and playing with a mud kitchen; parents also reported that their child had been doing these activities. Children didn't make any links between skills they had learnt in Forest School and skills and activities utilised at home, beyond the activities listed. Parents discussed their children were more engaged in home-learning if, as they felt was the case in Forest School, learning was outside and practical.

Although again, associational data, a comparison of all skills (not just those parents noted a direct correlation) reported in interviews to be found in each environment are listed below. Skills are repeated in the columns where they cover more than one skill in the other column (e.g. *Wanted to explore nature*).

Seen in Forest School	Seen in home learning
Engaged	Engaged/keen to learn
Confidence natural world	Wanted to explore nature
Knowledge natural world	Wanted to explore nature
Positive risk taking	Not directly reported
Social skills	Confident in the community
Perseverance	Not directly reported
Listening	Not directly reported
Enjoyment	Happy to be at home
Mentioned briefly	Wanted to be creative
Mentioned as subtheme but not full theme	Independent Learners

5.1.3*: Q3 Was there a difference in children's learning behaviours, during the COVID-19 school closure period, between those who had participated in a Forest School, prior to the period, and those that hadn't?*

Although parents interviewed reported some skills from Forest School were generalised to the home learning environment this result wasn't captured within my survey data.

Parents and children interviewed reported Forest School gave them opportunities and learning experiences that couldn't be found in the classroom, but also skills that might support them with future learning, including social skills, positive risk taking and perseverance. There were also a number of skills reported to have occurred in both the Forest School and home learning environments within the interview data. However, when a group that had participated in Forest School was compared to a group that hadn't, no significant differences were found. There were no differences between groups for: hours spent accessing

the school curriculum, hours learning (including that outside of a formal curriculum), time spent learning independently, occurrence of child choosing their own learning activity, time spent learning in an outside space, difficulty of the experience for parents, difficulty of the experience for the child, child's emotional wellbeing, child's concentration levels and child's co-operation with others. This difference may have been due to specific elements of the quantitative data, or it may have been due to the quantitative and qualitative aspects having different aims and outlooks (Creswell, 2009).

There are a number of things we must consider when unpicking these results. First, we must look at whether other factors may have been contributing to the findings, for example in the comparison group seven children had an identified SEN, compared to three in the Forest School group. However, this difference was not statistically significant so arguably the groups were still comparable. It is of course hard to know the level or impact of this need for each individual. For example, although children with an Education Health Care Plan, which would largely capture those with higher levels of SEN, were sometimes offered a place at school during this time, some weren't and others had to remain at home for medical reasons (Jayanetti, 2020). However, overall having a child with SEND was likely to have negatively impacted parents' experiences of this time (Disabled Childrens Partnership, 2020).

In addition, differences have also been found during the home learning period related to families' socio-economic status and time spent learning. Primary school children from the lowest income families were found to have learned for significantly fewer hours per day than those from their middle income and higher income counterparts (Andrew et al., 2020). Children from higher income families were also found to have spent more time learning independently (Eivers, et al., 2020). The latter is of particular saliency when we reflect on my

own study's only significant finding being that children who had participated in Forest School for 6 months or more, were reported to spend longer learning independently than those who hadn't participated.

To explore this impact in my study, preliminary analyses were carried out to check for statistical differences between the group's demographics. These were carried out for: presence of SEN, gender, year group and FSM Status. No significant differences were found, suggesting the groups were likely to be comparable and any differences found, were less likely to be due to differences in demographic/confounding variables such as parental income (these statistics are reported in the Results section). However, it is still important to consider the range of factors that may have been impacting on children's learning and experiences during this time. Differences and details that were highlighted, at least partially, in my study's qualitative data.

There is also the possibility that the learning parents referred to in interviews was conceptually different between groups; some parents may have felt that learning can include things outside the formal school curriculum and/or could include play based activities (O'Gorman & Ailwood, 2012). Others may have seen home learning solely as the formal curriculum. However, both formal curriculum-based learning and learning outside of the formal curriculum, were captured in the survey data with no significant differences occurring between groups for either measure.

It is also possible that differences were found in the survey (which could explain why the skew of data and median data values were found to be higher in the Forest School group), but that the sample size meant that the effect did not have the power for this difference to be statistically significant. A limited sample size was of particular poignancy, when the sample

was reduced further for the Forest school group, to only include those who had participated in Forest School for a longer time-period. For this smaller group, children were found to have spent a statistically significant greater number of hours learning independently, compared to the group that hadn't participated in Forest School. Interestingly, when asked directly in the survey what skills Forest School develops, no parents reported they felt Forest School promoted independent learning during the home-learning period for their child, again putting into question the causality of this association.

It is also possible that what parents noted was beneficial for learning that existed within Forest School, was more difficult to implement during the COVID-19 home learning period. Parents in interview data felt that children were much more engaged and subsequently learned better in the natural environment; they also noted that activities themselves within Forest School were much more engaging. Parents interviewed reported they had taken their child outside as much as they could to learn and to participate in Forest School activities during the home learning period, so they would be more engaged. However, within survey data, no significant difference was found between groups regarding time spent learning outside. It is possible parents interviewed perceived they spent more time outside than they did, because it was important to them, enjoyable and therefore more memorable (LaBar & Cabeza, 2006). Alternatively, those interviewed may have had a different experience from those who participated in the survey and some of these possible differences (such as socioeconomic status or presence of SEN) have already been discussed.

With a number of questions unanswered we must therefore look to the current literature for further explanation.

5.2: Relation to existing literature and theory

5.2.1: Engagement from learning outside

Parent and child interview data reported children were more engaged in Forest School with parents perceiving one of the causal factors behind this to be because of children being outside in nature; this relationship has also been seen in the literature. Kuo et al. (2018) found children were significantly more engaged in the classroom after a prior lesson in nature, than after a matched classroom-based lesson. Engagement was measured through teacher ratings, the number of prompts required from teachers, independent photo-based ratings, and an index of classroom engagement measure. All measures showed higher levels of engagement in the nature group. The authors argued this wasn't due to the novelty of the experience as the effect was sustained in over five weeks of nature lessons.

Having the opportunity to walk or be outside in the woodland, may have been of even more importance during the pandemic. This opportunity may have been of further salience for certain groups, such as those in urban areas of deprivation, where living without a garden has been associated with a higher level of poor mental health (Pordes Bowers & Strelitz, 2012).

Although the research suggests that the majority of children will show greater levels of engagement outside, the meaning children and parents make regarding this outside experience may differ, depending on their prior experience of the outdoors and more specifically woodland (Leather, 2018). This effect has been found elsewhere, with children's existing experience and values shaping children's outdoor learning experience on a visit to a US national park (Brody & Tomkiewicz, 2002). In my own study, many of the parents interviewed reported they frequently visited the woods and felt comfortable in the outdoors.

This may therefore have influenced the meaning they made, and their child made, of the Forest School experience. Both the survey and interview data captured perceptions; if parents that were surveyed did not have this prior experience with the outdoors, this may have changed the meaning they made of the Forest School experience and may at least partially explain why no differences were found between groups in the survey.

5.2.2: Forest School Research

Some authors, although proponents of Forest School, raise concerns regarding conclusions drawn from Forest School research and the commodification of Forest School (Leather, 2018). Leather (2018) notes that making Forest School into a business or product has led to the tendency to make claims that overextend what has actually been captured by the research. The author reports that assertions from evaluations of Forest School have then subsequently been referred to as definite truth. The author gave the example of O'Brien & Murray (2006; 2007) and O'Brien (2009) who reported increased levels of self-esteem (child's internal sense of value and worth) from Forest School that had been measured by, possibly unsuitable, teacher and practitioner observations (external measures) of the child. The author claims this was then later reported in marketing publications for Forest School and later Forest School literature e.g. Knight (2009) and Barrable & Arvanitis, (2019). My own study tried to reduce the possibility of overreaching findings by also capturing children's direct views of their experiences of forest school and by using a comparison group.

Enjoyment and Wellbeing.

All of the children interviewed reported a great sense of enjoyment from their time at Forest School, a love of being in the woods and many reported that there 'were no bad things in Forest School'. It is possible that this was generated due to a sense of novelty of the

experience compared to typical schooling, however many of the children interviewed had been attending Forest School for a number of years, making this novelty less likely. When we compare this to the literature, similar findings to my own are reported with McCree et al. (2018) also capturing an increase in positive affect. This was less likely to be due to a sense of novelty of experience, with children tracked over three years in Forest School sessions. Children were observed by the researcher and forest school leader to be at ease and free from emotional tensions in the forest sessions. However, in both my own study and McCree et al. (2018) it was unclear whether this positive affect generalised to outside of Forest School. In my own study although parents and children stated the children were generally happy at home, there was not the clear sense of excitement reported, as there had been with Forest School. Within McCree et al. (2018) the authors reported that school staff who observed children in both the Forest School and school environment, rated children higher on wellbeing, than those who had observed them in the school environment only. The authors considered whether this finding was due to a change in perceptions or whether wellbeing had not transferred to the school environment. Particularly if parents had not observed their child in Forest School, this may have contributed to the fact that no significant differences were found between groups regarding emotional wellbeing in the home learning environment within my survey, even though they had been seen in prior literature.

Connection to the natural world and place.

Within my study, parents interviewed reported that their child felt more connected to the woodland and had a greater knowledge of nature, following attendance at Forest School. Children interviewed also discussed how they enjoyed learning about the world around them at Forest School. Ridgers et al. (2012) also found that after participating in Forest School, children wished to spend a greater amount of time in nature and find out more about wildlife.

Similarly, children and parents interviewed in my own study noted that they (or their child) wanted to spend time in nature and were interested in activities such as using a mud kitchen or finding bugs. during the home learning period.

Although parents interviewed reported the importance of spending time outdoors, no significant differences were found between groups for time spent outside learning in my survey; free time spent outside was not captured. It is hard therefore to explore whether this is in contrast to O'Brien & Murray (2007), who noted families spent more time outdoors after their child had attended a Forest School.

Positive risk taking.

Children tended to focus on the risky activities in Forest School, but also discussed what was likely to keep them safe, such as adult support, or particular places they couldn't go (e.g. too close to the fire); this was also something reported by parents. Within the literature, similar findings were reported when children were interviewed in Coates and Pimlott-Wilson (2019). The author's found children were aware of the risks in the woodland and how they may mitigate them.

In my own study, parents interviewed appeared quite at ease with their children taking part in these 'risky' activities. However, other than one parent, who explicitly noted her perception of risk had changed following her child's Forest School, we do not know whether parents would have had these beliefs regarding risk before their child attended a Forest School. Savery et al. (2017) found no significant differences in changes of perception of risk in parents, following their child's attendance at a Forest School, but did find that school staff became less risk averse following Forest School. Harris (2017) also found that Forest School

practitioners interviewed felt that Forest School taught children to identify risks in the woodland and gave them the skills to navigate these.

Findings around risk perception and behaviour was not captured within the survey.

Freedom and choice.

Although children interviewed reported they could choose what to do in Forest School, within my survey no significant differences were found in the number of activities children came up with themselves during the home learning period. However, this may not have reflected whether and how children may have reacted if they were given a choice during the home learning period. Subsequently, my survey found that children who had attended a Forest School for over 6 months were more likely to have learnt independently (without an adult). It is difficult to know whether children would have felt more comfortable with independent learning, because of having previously experienced a sense of autonomy and freedom in Forest School. Alternatively, it may have been the child found this independence difficult but had to carry on in this way as their parent was working. Within the literature, Mackinder (2017) showed the reported sense of freedom from children was more likely to be specific to the Forest School approach, rather than due to being in a woodland environment. The author found that when the session was led by a Forest School practitioner, the child explored a physically larger area than when the session was in the same outdoor setting but led by a member of school staff.

It is possible, therefore, that this sense of freedom relates more to the adult's approach. If parents didn't offer this approach during the home learning period, this freedom and choice may not have been experienced to the same extent. Further research would be needed to unpick the impact of the child's past experiences in learning (had they previously

experienced more autonomous learning tasks) and the impact of the adult's approach to teaching, within the home learning period.

Social Skills and friendships.

Parents interviewed felt that their child developed social skills following attendance at Forest School. Children interviewed focused more on the friendship aspect of Forest School, rather than the skills learned and reported that they liked the other children in Forest School. Within my survey, there were no significant differences between groups for how children co-operated with others at home. However, it should be acknowledged interaction with siblings and parents may be very different from that with peers. In fact, two parents interviewed, noted that their child missed other children and found it difficult not to see them during the home learning period. Within the literature, as well as being reported for primary school children (e.g. McCree et al., 2018; Coates & Pimlott-Wilson, 2019), the development of social skills was also noted for Early Years children (e.g. O'Brien, 2009 ; Elliott, 2015). This was also very poignant for children who may have had greater difficulty with developing friendships and who had an identified SEN. Bradley and Male (2017) found that children interviewed, who had identified social communication difficulties, reported that they liked doing things with their friends in Forest School; school staff also reported that the children had made friendships in Forest School. Finally, Tiplady and Menter (2020) also noted children enjoyed time with their peers in forest school.

5.2.3: *COVID-19 research*

The research aimed to explore whether Forest School helped children learn and develop skills and whether these skills would subsequently assist children in the COVID-19 home learning context. Reflecting on the benefits found from research of children in nature and from the

more methodologically robust Forest School research available, it is possible that benefits were found in my own Forest School sample. However, the uniqueness of the COVID context, where children were not in an environment they were used to learning in and could have perceived the time as a break from school, may have meant these benefits were not generalised to this environment. It is also possible that the Likert Scale survey measures were not sensitive enough to pick up differences between groups, for example parents may not have known what 'somewhat well' looked like in practice. To unpick this further, it is important to look at what other literature found regarding home learning and the pandemic.

What was the overall impact of lockdown?

As well as looking at what home learning looked like during this time, it is first important to reflect on the wider impact of COVID-19 restrictions on children and parents, during this time. As well as social restrictions, many families also had to contend with financial difficulties, fear of catching coronavirus, disruptions to planned healthcare treatments and additional burdens of new working patterns and home roles (Chandola et al., 2020). For adults, research suggests that the mental health impact was initially worse as the lockdown started in March and April 2020, with over 30% of adults reporting levels of mental distress indicative that treatment may be needed at this time. This was a 10% rise from the 20% level that had been reported between 2017-2019 (Daly et al., 2020). Chandola et al. (2020) also reported the prevalence of common mental health disorders to be at 37.2% in April 2020 and decreasing to 25.8% in July 2020. Adults living with children were also more likely to report greater mental distress than adults living without children, during this time (Kwong et al., 2020; Xue & McMunn, 2020).

What did remote learning look like?

It is important to consider that, particularly for the non-significant findings in the survey, variation between children's learning experiences may have been influenced to a greater extent by parental circumstances than by prior participation in a Forest School. Although we have already considered FSM status, the research did not consider whether parents were furloughed or not employed prior to the pandemic; this was likely to have influenced the amount of time a child spent learning and spent learning independently and is therefore a study limitation. The National Foundation for Educational Research (NFER) reported that parents from low income households spent more time helping with school work during the pandemic, compared to high income households, and this may have been because they were furloughed (Eivers et al., 2020). Other research also suggests that those from lower income households were less likely to have higher educational qualifications and had access to fewer resources (or a suitable workspace) to support their child with schoolwork, at this time (Crew, 2020). Therefore, a greater number of hours does not necessarily lead to better learning outcomes for the child. In addition, Eivers et al. (2020) also found that children from families with parents with higher education levels were likely to spend longer learning. Although no significant differences were found between groups for hours spent learning in this survey's findings, it would have been useful for the study to have explored the impact of parental education levels and furlough status on this and what the learning may have looked like. It would also have been useful to look at Although as discussed this research considered the impact of socio-economic status (through the proxy of FSM Status), which research suggests appears to have one of the biggest impacts (Pascal et al., 2020), it would be useful, for any future research to consider in greater depth, the characteristics of families' home learning environments.

Furthermore, children's learning experiences may have also been influenced by wider systemic factors, such as attending a school that is located within a more deprived area. Cullinane and Montacute (2020) found that 60% of private schools and 37% of state schools in the most affluent areas already had an online platform ready to receive work in April 2020 compared to 23% of schools in the most deprived areas. As previously noted unfortunately school level deprivation data could not be captured due to possible breaches of anonymity in the survey. The survey questions tried to reduce the impact of this by asking parents about all formats of learning, whether online or through other methods such as posting worksheets. However, it is acknowledged that the ease of an already established online platform may have led to these schools being able to provide pupils with a greater amount of work and therefore these pupils working longer hours. This may have impacted the survey's results and is acknowledged as a limitation.

I found survey respondents spent an average of 3.5 hours accessing the school curriculum at home for the Forest School group and 3 hours for the comparison group. This was longer than captured in other research with Pensiero et al., (2020) capturing children in primary schools spending an average of 2.4 hours per day doing schoolwork in April 2020. However, Andrew et al. (2020) found that for educational activities in general (this could include that outside of the curriculum), children spent 4.5 hours on average learning per day, in the lowest income families. In the highest income families, this increased to an average of 5.8 hours. My own survey found time in total spent learning (curriculum-based and outside of the curriculum) was on average 5.5 hours for the Forest School group and 3 hours for the comparison group.

Pensiero et al. (2020) also found that parents spent an average of 2 hours supporting their child with schoolwork per day, leaving 0.4 hours for independent learning. This was similar to my own survey sample where both groups' most frequent response was less than one hour

of independent learning per day in the initial sample (Forest School group not limited to those who had participated in Forest School for over 6 months).

Time spent outside.

Waite and Creswell (2020) found 90% of a sample of parents reported their primary school children were spending more than 30 minutes outside each day. However, in the study no further clarity was reported on total time outside, nor what children were doing outside (this may have been exercise). Therefore, it is difficult to compare whether my own survey responses, regarding outside learning (mode Forest School-10 hours per week, comparison group 2 hours per week) were typical of the time-period.

Of interest is that parents interviewed in my study, and prior literature, noted that children are more engaged outside and are more willing to learn. However, there was no significant difference for the number of hours spent learning outside in the Forest School group to that of the comparison group. This may have meant that even though parents interviewed had reported seeing children more engaged in Forest School, with time being largely spent within the house during lockdown, this same level of engagement and willingness to learn wasn't seen.

What were parents' experiences during this time?

Waite et al. (2021) also collected Strengths and Difficulties questionnaire data (Goodman, 1997) from 2673 parents and carers of UK children aged 4-16 and found a 10% increase in primary school children meeting possible/probably case-ness criteria for emotional symptoms, during March and April 2020.

Additionally, for parents of children with SEN, almost 70% sampled in McElroy et al., (2020) felt their child's wellbeing was a source of stress during this time. In the study around 45% of parents of children without identified SEN felt their child's wellbeing was a source of stress. Although my own survey did not ask parents about whether their child's wellbeing was a source of stress, the survey did ask how parents felt their child managed their wellbeing, during the period. Of difference to McElroy et al. (2020), the most frequent response in both groups of parents in my survey was that children managed their emotions very well; this also was reflected in interview data for Forest School children.

More similar findings to my own data were reported by Mansfield et al. (2020), who noted in May-July 2020 around 40% of a sample of Year 4-6 children reported feeling happier than usual during this period. However, the study also found that around 30% of the same age group reported that lockdown had reduced their general happiness levels. Furthermore, Benzeval et al. (2020) reported that in May 2020 of 5566 parents sampled, 26% of parents felt their relationship with their child had improved during lockdown, with only 4% of parents feeling it had got worse. Improved relationships may have supported children's wellbeing during this time.

These and studies already discussed, highlight the breadth and variability of children's experiences during the pandemic, between individuals at any point and within individuals across the progress of the pandemic. Evidence suggests that the mental health of some groups was disproportionally affected during the first lockdown, with other groups happiness levels remaining relatively stable (Public Health England, 2020). If the sample for my own study was not representative of the wider population, as is often the case in convenience sampling and will later be reflected on, it is possible that only findings from those whose happiness levels remained stable were captured and may explain the differences in my findings to some of the literature.

Parents' concern of doing things differently in these times.

Another possibility to consider is that of the uniqueness of the context in which the research was carried out and whether the behaviour of children and adults during the home learning period could be used as a comparative marker. This has been acknowledged by the British Psychological Society who note "For non-COVID-19 research, researchers should also consider the generalisability of the results obtained, during these unusual circumstances" (The British Psychological Society, (2020), p.2). This was more likely to have impacted parents' and children's home learning experiences (or their perceptions and recall of it), rather than their recall of Forest School, with views captured in my own study largely in line to findings already captured in the Forest School literature. In times of stress and uncertainty people often revert to behaviour and routines that are most familiar to them (Neal et al., 2013). In addition, when people feel out of control and highly stressed, such as in a pandemic, creativity has also been shown to reduce (Byron et al. 2010).

During this time of adjustment, it may have been harder for parents to differ from the classroom approach and to cover the school curriculum in less formal and/or more engaging ways. It may have been more difficult to use outdoor spaces for learning: for example, adults in the house may have been shielding, or have found this difficult to do whilst balancing work. If it was a time of stress for families, it may also have been difficult for children to be creative and develop their own learning activities. This is of course speculative and further research is needed to confirm whether differences in learning behaviours between children who had participated in Forest School and those that hadn't, would have been captured in a classroom environment or in a home environment during a more 'typical' time-period.

5.2.4 *The unique contribution of this research*

After having compared my research to prior Forest School and home learning literature I will now reflect on its unique contribution to the literature and how it has 'filled a gap'. Much of the previous Forest School research has focused on findings from solely qualitative methods or, if mixed methods, has included a limited transparency in its quantitative methodology and reported a limited number of quantitative results. This study therefore adds to the field by being one of the few available that uses quantitative methods, that arguably answer different research questions, and that has been transparent in its methods. Using quantitative methods in my study allowed for a much bigger sample to be used and from this greater generalisability than much of the past literature. Quantitative methods also allowed for a comparison group to be used, a vital addition when you consider that in much of the past research it has been difficult to distinguish between effects related to attendance at Forest School versus typical developmental progression. In addition, as much of the past Forest School research has not carried out statistical analysis of quantitative data it is important for the findings, which have used statistical analysis to explore difference, to be disseminated. Disseminating non-significant findings, in a field which is more likely to publish significant results, also supports the research field to be more representative of what it has found and allows readers and policy makers to make more informed decisions (Franco et al., 2014).

Although not within the Forest School context but instead within a home learning context, the quantitative aspect of my research found participation in Forest School did not result in a difference of reported learning behaviours. This makes the research useful when considering the effectiveness of Forest School and whether any benefits can be seen outside of the Forest School environment. However, the use of mixed methods in my study has highlighted how something can be seen as valuable and important to families without generalising to a

particular setting. These are all things that can be taken into consideration by those choosing whether to adopt, or participate in, a Forest School programme.

Finally, previous studies have looked at whether Forest School has generalised to the school setting (McCree et al., 2018), this study was one of the first to look at whether Forest School benefits were seen in the context of home learning during the COVID-19 pandemic.
The study also added to the literature on home learning during the pandemic giving us insight into what it was like for children and families in one LA during this time. Being cross-sectional the study was implemented quickly and has arguably put in place foundations for future longitudinal research on the topic.

5.3: Reflections on methodology

5.3.1: Length of study and study design

The study was cross-sectional with different groups compared at one point in time for the survey. In both the survey and interview data, and particularly where parents and children were reflecting on Forest School experiences, data was collected retrospectively. Parents completed the survey from September-November 2020 and additional parents and children were interviewed December 2020-January 2021. This included reflecting on home learning experiences from March-July 2020 and Forest School experiences prior to March 2020. This time delay could have resulted in a greater likelihood of recall bias, particularly if there were preconceptions about home learning or forest school held by the participants (Sedgwick, 2012)

Unfortunately, due to the COVID-19 pandemic and due to the time remit of a doctoral study, it was not possible to collect data from children and parents closer to the event, nor at

multiple points in time. For example, it was not possible to track a child across different time points and compare progress rates across groups prospectively (which may assist with unpicking causality). It was also not possible to have collected views closer to the timeframe they took place. The COVID-19 pandemic resulted in Forest Schools being closed for the period of data collection and so parents and children were only able to reflect on past experiences in the study. Furthermore, it would have also been difficult for parents and children to reflect on the period of home learning and its overall impact or the overall 'average' (such as hours spent learning per day), while still experiencing it at that time (Holmes et al., 2018).

The adopted cross-sectional design also meant that data collected was associational, between participation in a Forest School and skills developed, rather than causational. Even though in the interviews, parents attributed these differences to Forest School, it is difficult to robustly conclude whether this was the case in this study design. Nevertheless, the research is still of utility: cross-sectional studies that are quicker and cheaper to carry out are often used prior to more complex longitudinal, cohort studies (Sedgwick, 2014). At present, further investigation, such as with a bigger sample size, is needed into why parents interviewed felt Forest School was so beneficial, but this effect was not seen in the home learning environment, before an expensive and resource heavy longitudinal study would be pursued.

To explore whether a longitudinal study may have offered different results, it is helpful to look to the literature. Although only a small number of studies have focused on longer term outcomes, McCree et al. (2018) found a significant difference in the progress of a group of children who had participated in Forest School, in wellbeing and academic outcomes when compared to their peers. This sample comparison included like for like in numbers of FSM

and Pupil Premium recipients. The authors tracked 11 children over three years in Forest School and comparatively to their peers, the Forest School group made greater progress in reading, writing and maths. In addition, Forest School children had increased levels of attendance and reported a greater sense of connection to nature. Children's wellbeing and engagement was also noted by practitioners and children themselves in each session.

5.3.2: Mixed methods model adopted

It is important to acknowledge that any of the mixed method models chosen would have come with their own strengths and challenges. My adopted design looked to corroborate quantitative and qualitative findings. However, as the qualitative findings suggested Forest School supported children's learning, but this was not seen in the quantitative findings, it was more difficult to meet the research's aims of creating an overall valid and well-substantiated conclusion about the impact of Forest School (Creswell &Plano Clark, 2007). In terms of understanding the results, the adoption of an explanatory design, with qualitative data aiming to explain or expand on quantitative results may have been more helpful.

Creswell and Plano Clark (2007) note that the explanatory design can be helpful in explaining unexpected or unclear quantitative findings. Although no prior study has investigated the impact of Forest School in the home learning environment (to the authors knowledge and at date of writing), as prior literature has suggested that benefits have been seen outside of Forest School (e.g. Bradley and Male,2017: differences seen by parents and teachers; McCree et al., 2018: improvement, in academic outcomes and attendance), the outcome of no significant results for the full sample was unexpected. Furthermore, as it was unclear whether the one statistically significant survey finding (when the Forest School sample was limited) was due to statistical error, qualitative data could have been used to

follow up and explore this particular finding further, as well as why there were nonsignificant findings.

Yet the model my research adopted did have its own strengths. For example, being efficient with both quantitative and qualitative data collected at similar time points; this was very useful for a doctoral study. The study design also meant each type of data could be collected and analysed separately and if there had been a problem with analysis or recruitment in either of these, it would not have impacted my entire data set and study findings (Creswell and Plano Clark, 2007).

5.3.3 Length of Forest School

The Forest School Association note that Forest School must be a 'regular process' and a number of Forest Schools have reported that the programme should ideally take place throughout the year, so that children can experience all seasons (Forest School Association, n.d.-b; Forest School Training, n.d.). There is no set definition on what constitutes as 'regular', in Forest School, so parents were asked to make this subjective judgement. As an arbitrary cut off, parents were also asked whether their child had participated in Forest School for six months or more. Unfortunately, it was not possible to compare the comparison group with a sample of children who had participated in Forest School for a year or more (to have experienced all seasons), as this would have resulted in too limited a sample for comparison. As the only significant difference found in the survey was that in the comparison of the longer-term Forest School group and the comparison group, it is possible that if the sample included those who had participated for a year or more, further differences would have been found.

The use of longer programmes, leading to greater benefits, has also been highlighted in a review of the evidence base for outdoor learning programmes as a whole (Fiennes et al.,

2015). One systematic review (Gill, 2011), reported there was robust evidence that spending time in nature leads to improvements in mental health and emotional regulation in children. The review of the evidence base also noted the claim that Forest School projects were associated with improved social skills and improved self-control, had some good support (Fiennes et al., 2015).

However attempts to maintain 'purity' of the Forest Schools' form, for example by ensuring sessions are for a longer time period and through following a set of defined principles (FSA website), may work against the flexible adaptation that local contexts, such as education settings, might need in order to implement the approach (Waite et al., (2016), p. 15).

5.3.4: Sample

Parents and children were also chosen as participants, rather than teachers or Forest School practitioners, in order to try to reduce the possibility of preconceptions of Forest School and a vested interest in the programme. Other than for one parent interviewed, parents were offered the Forest School programme through their school, rather than through seeking out and paying for the provision themselves. It was hoped, therefore, participants would be less likely to have had preconceived beliefs of Forest School. This sample also meant participants would not need to justify the programme's effectiveness for their employment or need to provide evidence for why their school may have implemented it in the first instance. Therefore, although other methods were preferable, the research utilised the best timeframe (as discussed at the start of this section) and participant group available. Sampling was a mixture of purposive (in order to seek out a Forest School group) and convenience (due to the doctoral nature of the research and cost time and effort needed for other methods). Unfortunately, the former may have led to selection bias from myself as the researcher and

the latter may have meant it was less likely the sample findings could be generalised to the wider population, for example not having participants with a range of demographics and/or not including harder to reach samples such as those with no internet access (Jager et al., 2017).

Selection bias may have also led to participants with a greater polarisation in views (Bail et al., 2018) e.g. those who were familiar with Forest School *may* have gained stronger views of its benefits, even in the presence of conflicting information regarding its effectiveness. Convenience sampling may have also led to those who had more positive experiences during lockdown to come forward to participate, with those experiencing a greater number of stressors not wishing to take on the additional time burden of research at this point. Although I aimed for both the survey and interviews to require limited time and effort from the participants and to be completed at a time convenient to them, it is possible this may explain why some other literature reported children's wellbeing declining during this time (e.g. Waite et al., 2021) when my own sample reported children did well in managing their emotional wellbeing. The limitations of the sampling methods are acknowledged.

In addition, the sample for the survey was one from one LA within England, which may reduce the generalisability of the findings to the wider UK population. It would be useful for future research to include multiple LA's and/or be at a national level to explore whether there were any specific factors to this LA sample, that may have influenced the results.

5.4: Implications for EPs and future research

5.4.1: Schools and families

Increasingly EPs are working with whole school systems as organisational consultants (Eloquin, 2016) and being asked to advise schools on what evidence-informed educational practices are available (The British Psychological Society, 2019). Thus, knowledge of the

evidence behind programmes such as Forest School and whether these should be recommended to schools is important. This research involved the use of mixed methods and it will be important for both the quantitative and qualitative findings of this study (and others) to be shared with senior leadership staff of schools in order for them to gain a more comprehensive picture of whether to implement a Forest School programme.

For example, a school that has highlighted in its action plan the need for greater levels of engagement, enjoyment and emotional wellbeing or physical activity, may see the findings of this study as evidence in favour of implementing a Forest School. However, a school that has highlighted the need to build particular attainment-based skills (such as in numeracy), or build attention and concentration within the classroom, may see the findings as evidence to look to invest in other programmes.

Schools, developers of educational policies and LAs may traditionally place more value on the use of quantitative data in evaluation and research (Kirkup et al., 2005; Roberts-Holmes & Bradbury, 2016). However, schools may also find value in research that captures child and parent perceptions, that may be more easily captured by qualitative research. Schools may consider this type of research in order to fulfil requirements set out by them in legislation, and/or in guidance they may need to refer to. For example, the National Institute for Health and Care Excellence in their quality standards for school based interventions (National Institute for Health and Care Excellence, 2018), highlight the importance of children, young people and their parents having the opportunity to contribute to approaches that help their physical and mental wellbeing in education. The SEND Code of Practice (2015) also highlights the need to consult with children and parents on provision in place. Furthermore, some parents and children may place greater value on the enjoyment and engagement

captured by parents and children in this study, than that of learning data. As discussed, capturing both quantitative and qualitative data in my study will help schools to gain a more holistic picture.

5.4.2: Educational Psychologists as researchers

As has been previously noted, in order for schools, children and parents to gain a credible and valid view of Forest School, it is vital that the evidence base is transparent in its publishing of non-significant findings, such as the survey findings in this study (Banks & McDaniel, 2011; Cook & Therrien, 2017). This is also important to report considering, at least regarding that which was extracted for my own literature review, there are far fewer quantitative studies of methodological rigour, available in the area of Forest School that can ask and answer different questions of the qualitative research (Bazeley, 2009). It is also possible that quantitative studies have been carried out in the area of Forest School but not published due to non-significant findings. Therefore, to gain a better understanding of Forest School, further research that involves rigorous quantitative methods (including that of mixed methods) is vital.

The findings of my study could have been interpreted very differently if the study had involved one methodology alone. The use of quantitative and qualitative methods meant the study was able to capture a broader and deeper understanding of the phenomenon measured (McKim, 2015; Hansen et al., 2016). This strengthens the argument for the utility of mixed methods, particularly when some Educational Psychology researchers may shy away from such methods. This may be due to the greater demands on time, effort and expertise needed for them (Creswell & Plano Clark, 2018) or it may be due to concern of journal editors and reviewers' perception of the approach (Alise & Teddlie, 2010).

Alongside other mixed methods literature, this may also provide evidence for the utility of including mixed methods content in Educational Psychology doctoral level training, to institutional providers that may have been previously guided by a focus on quantitative methods (McCrudden et al., 2019).

5.5: Dissemination

5.5.1: Feedback to participants (including schools)

Research should be designed, reviewed and conducted in a way that ensures its quality, integrity and respect for those who participated in it (The British Psychological Society, 2021). Therefore, a report of the findings will be sent to interview participants before further dissemination. This is so participants have an opportunity to inform the researcher if they are not happy with how their views have been represented and, where appropriate, the results will be amended. A briefer child-friendly summary will also be sent to children who were interviewed. Following this, as survey participants were anonymous to the researcher, schools that were contacted in order to distribute the survey, will be re-contacted and asked to disseminate a draft report, with parents who participated invited to comment. When comments have been received, the report will be shared with the remaining schools in the local area, where possible.

5.5.2: Feedback to Service and Educational Psychologists

A research report will be sent to the LA Educational Psychology Service, the Principal EP and the local service lead, who agreed the research could take place. A presentation will also be given to the service, regarding the findings and the option for a summary report to be shared with further schools, via the services' link EPs.

5.5.3: Feedback to organisations: Forest School Association and Education Otherwise

A report will also be shared with organisations who deliver Forest School programmes and train Forest School practitioners, including the main body for Forest School in the UK (Forest School Association), and local wildlife trusts. As part of the training Forest School practitioners are required to reflect on the evidence base for Forest School and draw from it in their work and this research will add to that.

A report will also be shared with organisations who have the aim to support parents and children with home learning, for example Education Otherwise. Although a unique circumstance, the COVID-19 pandemic can still provide the field with information to improve home learning experiences for those who might elect to do so, during more typical circumstances. These organisations will also have a large network of professional contacts and families that they can disseminate the information to.

5.5.4: Publication

Where possible, the findings will be written up for publication within peer reviewed journals, as well as sources such as professional and parenting magazines where appropriate, if relevant to the audience and the topic. This will include publications aimed at outdoor education professionals, those aimed at parents (in order to help them gain a more comprehensive picture of Forest School and learning in the pandemic) and those aimed at the wider Educational Psychology profession.

5.6: Authors Reflections

Carrying out this research has added to my own learning of the EPs role and contribution to the research field. It has made me draw parallels to the practice side of my work, in ‘being

able to make informed judgments on complex issues in the absence of complete information' (Proficiency 14.10: Health and Care Professions Council, 2015). I felt this in light of drawing on a limited literature and somewhat mixed findings, in this mixed methods study. Furthermore, it has made me consider the importance of EPs as researchers and having the opportunity to add to the research that we so often are required to draw from (Topping & Lauchlan, 2013).

Of further reflection, and in line with the critical realist approach, is that our knowledge of the world is relative to who we are and what we are doing in order to acquire understanding (Archer et al., 2016). My own concept of what 'learning' is, as well as my own schooling in an adult-directed teaching, mainstream UK school, was likely to have significantly contributed to the methodology and questions presented to participants, and thus the findings.

Throughout the study, it was clear from speaking to participants and those from organisations linked to Forest School, the passion individuals had for Forest School and for speaking of its benefits. This challenged me in my own views of weighing up the value of evidence based practice versus practice based evidence (Fox, 2011). I reflected on whether I had been 'holding' onto theories of what I perceived as 'scientific', rather than looking to those who have experience in the field. I didn't have this practice-based evidence myself, as a researcher, as I had not previously participated in the facilitation of a Forest School and therefore would not have this kind of evidence to draw upon.

The views of those with practice-based evidence of course should not be ignored. However, as critical realist researchers we must also look to see which theoretical explanations most accurately represent 'reality' and have the greatest explanatory power, given our existing

knowledge (Archer et al., 2016). Therefore, throughout the study I have tried to put forward objective reasons as to what represents reality whilst keeping in mind my fallibility as a researcher.

A final reflection is the gratitude I hold to those who chose to participate in the study, with no incentive given. This is important to acknowledge in any time period, but arguably even more important during a pandemic, where parent and child mental health has declined and parents have found it difficult to find free time amongst balancing their own life demands (Waite et al., 2021).

5.7: Summary and Conclusions

The COVID-19 pandemic has been a time of economic and social upheaval, a time of adjustment and for some, a time of emotional difficulty. It has also been a particularly challenging time for children's education, with findings that children are behind in learning (Blainey & Hannay, 2021) and development (Bowyer-Crane et al., 2021), having missed out on around half a year of 'normal' schooling (Siebieta, 2021). Anything that may have reduced the negative impacts of these events for children and families, whether through providing an experience that offers enjoyment and respite, or through supporting the developing of skills for learning, should be captured and shared. Lessons learned will also need to be implemented for future pandemics and future home learning experiences. Furthermore, the exploration of what factors and approaches may facilitate children's learning experiences more generally, through the evaluation and development of a methodologically robust evidence base, is vital in the role of the EP.

This mixed methods study looked at the impact of one learning approach, Forest School, on children's home learning experiences in the UK, during the COVID-19 pandemic first school closure period**.** This approach was deemed as particularly important to explore, with its limited evidence base for learning (Leather, 2018) but presently increasing uptake from schools (Knight, 2016). My research did this by first exploring the context of the programme by looking at the history of forest school, outdoor learning and home learning approaches. It then reviewed the current UK literature for Forest School, evaluating the methodological robustness of the available research papers. This robustness was particularly limited for quantitative methodology, although held more promise, for some of the qualitative papers. I then presented an overall summary of findings from the selected literature, that informed the research design. My research adopted a cross-sectional design administering an anonymous survey to two groups of parents (a Forest School group and comparison group), on children's home learning behaviours from March-July 2020. I also interviewed five parents and five children on their Forest School experiences and home learning experiences.

My results showed that Forest School was clearly perceived as a meaningful and enjoyable process for the children interviewed, with parents interviewed reporting similar perceptions. Although some difficulties were reported, parents and children also seemed to report largely positive home learning experiences when interviewed. However, within the survey, no statistically significant differences were captured in parental perception of their child's home learning behaviours, between a Forest School and non-Forest School comparison group. The exception to this was when the Forest School group was limited to those whose child had participated in Forest School for 6 months or more. This smaller Forest School group was found to spend significantly more time learning independently, without an adult next to them, compared to the comparison group. Although Forest School research has often reported it

creates independent learners (O'Brien & Murray, 2007), it will be important for future research to replicate and strengthen the causality of this finding.

My study contributed to the Forest School literature but also to the literature advocating the use and value of mixed methods research. In particular, what was captured in this research and the conclusions drawn were likely to have looked very different if the research were to have chosen a solely quantitative, or qualitative approach. Taken together, the research tackled more of the complexities of evaluating any educational programme, as well as highlighting the complexity and number of different factors that may have impacted children's home learning experiences, during a pandemic.

The results provide a starting point for the literature, but show that further research is warranted, both in the area of Forest School, but also in children's home learning experiences during this pandemic. In particular, future research should explore whether differences in the quantitative survey findings would have been captured in more 'typical' circumstances. This may be such as whether there would be differences in the classroom (outside of the COVID-19 context), or differences if parents had a greater use of outdoor spaces during this time. It is my hope, however, that schools and Educational Psychology services will find this research a useful starting point in exploring the Forest School approach and in how they may support children and families, in future remote learning.

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Appendix A: Systematic Literature Review
Studies meeting Inclusion/Exclusion Criteria

Author	Peer reviewed	Methodology detailed	Noted Forest School definition	Type of study/tool needed to critique
1. Bradley and Male (2015)	Yes	Yes	Noted regular but not whether following FSA principles	Interviews- Qualitative CASP tool
2. Coates and Pimlott-Wilson (2019)	Yes	Yes	Noted that FS practitioner had completed training Forest School only ran for 6 sessions so could be argued as a novel experience.	Interviews-Qualitative CASP tool
3. Elliott (2015)	Yes	Somewhat-staff questionnaire, parental questionnaire	Noted FS definition but not whether regular? More of a scoping of what people think Forest School is than an evaluation of it.	Case Study – Qualitative CASP tool
4. Harris (2017)	Yes	Yes	Noted FS definition and regular, didn't discuss whether following FSA principles but did use FS practitioner.	Interviews- Qualitative CASP tool
5. Maynard (2007a)	Yes	Yes	Describes what FS is and history but doesn't use definition, notes was regular. Didn't discuss whether FS workers had received FSA training.	Interviews- Qualitative CASP tool
6. Maynard (2007b) (Duplicate data)	Yes	Yes	Describes FS but not FSA definition	Interviews- Qualitative CASP tool

7. MacKinder (2017)	Yes	Yes	Outlines FS definition, noted Forest School trained,	Case Study: qualitative CASP tool.
8. McCree, Cutting and Sherwin (2018)	Yes	Yes	Regular, longer term than others, doesn't list definition but does note activities based on FS model.	Longitudinal mixed methods:
9. O'Brien (2009)	Yes	Yes	Regular, definition listed is from authors themselves, does list ethos.	Case Study: qualitative CASP tool
10. O'Brien and Murray (2007)	Yes	Yes	Definition listed from authors themselves, 8 month period,	Case Study: Qualitative CASP tool
11. Richardson (2014)	Yes	Yes	Definition from Murray and O'Brien (2005)	Case Study: Mixed methods:
12. Rigers, Knowles & Sayers (2012)	Yes	Yes	Definition from Murray and O'Brien (2005) not FSA, regular (2 hours a week for at least 6 weeks)	Focus Group: Qualitative CASP tool
13. Savery, Cain, Garner, Jones, Kynaston, Mould, Nicholson, Proctor, Pugh, Rickard & Wilson (2017)	Yes	Yes	Definition from FSA listed, practitioners FS trained, said practitioners delivered FS regularly but not clear whether to the same group/	Mixed methods in a way case control as 50% had accessed FS 50% not. Use CASP Case Control tool
14. Waters and Begley (2007)	Yes	Somewhat	Not strict definition but describes what you do in FS,	Observation of free play- qualitative CASP
15. Tiplady and Menter (2020)	Yes	Yes	Definition from FSA	Not mainstream provision Mixed methods tool- observation and behavioural/questionnaire data

Excluded (not peer reviewed, no definition or method not disclosed)

Study	Exclusion Notes
Waite and Davis (2007)	Discussion article on FS
Massey (2004)	
Murray 2003,	
Roe & Aspinall	Definition of FS not listed
Smith, Dunhill and Scott (2018)	Review paper
Murray and O'Brien 2005	
Vandewalle (2010)	
Swarbrick, Eastwood and Tutton (2004)	Review paper/limited methodology
Hayward (2018)	
Davis and Waite (2004)	Unpublished report
Davis and Waite (2005)	
Davis, Rea and Waite (2006)	Discussion article
Waite and Goodenough (2018)	Secondary data reported elsewhere and only reviewed here
Button and Wilde (2018)	No definition
Vandewalle (2010)	Description of 1 FS

Excluded (not journal article/relevant to review question)

Study	Exclusion Notes
Sackville-Ford (2019)	Book review
Shields (2010)	Description of FS
Knight (2018)	Defending theoretical basis of FS
Knight (2011)	Seeking to define FS
Morgan (2018)	Discussion around use of Forest Space
Mycock (2018; 2019)	Not evaluation of FS
Cree and McCree (2012a, b)	History of FS
Waite, Rogers & Evans (2013)	Outdoor play not FS
Waite, Bolling and Bentsen (2016)	Comparing UK and Danish FS
Murphy (2020)	Not empirical
Taylor (2019)	Personal narrative FS
Kemp (2020)	How schools implement FS not impact on child

Appendix B: Methodological review- Qualitative Studies

Critical Appraisal Skills Programme (2018). CASP (Qualitative) Checklist. [online] Available at: https://casp-uk.net/wp-content/uploads/2018/03/CASP-Qualitative-Checklist-2018_fillable_form.pdf. Accessed: November 2020 (Please see below table for CASP example)

Study	Participant Group	Data Collection Method	Validity of results	Outcomes of Study	Will the results help
Bradley&Male (2015)	4 Children 6- 8 years; 3 mothers; 2 TA's.	Semi-Structured Interview parents; multi-method interviews for children	Method chosen appropriate. Not clear how participants selected.	Ethical issues, data anlysis and statement of findings discussed	May help for approaches for ASD more than evidence for or against FS. Small sample.
Coates &Pimlott-Wilson (2019)	18 children 8-9 years; 15 children 4-5 years . 2 primary schools.(n=33)	Semi structured interview children and participatory activities (e.g. word association and photographs).	Method chosen appropriate. Not clear how participants selected.	Ethical issues not discussed though cleared by committee, findings explicit but not researchers role (although 2 researchers not involved in project). Data not triangulated.	Discussed how FS learning and learning in classroom can be linked for mainstream primary children and possible benefits.
Harris (2017)	20 Forest School Practitioners who worked with primary school children	Semi-structured interview.	Only practitioners who were fully qualified, had experience of leading more than 40 sessions chosen. Method chosen appropriate	Ethical issues not discussed, data analysis process not discussed, credibility of findings not discussed	Useful in summarising large sample of FS practitioners, however as practitioners may have bias.

			for perspective and also asked about criticisms of FS.		
Maynard (2007a) (Some of methodology detailed in Maynard, 2007b)	2 EYFS Teachers, 2 FS practitioners	Semi-structured interviews at beginning and end of programme	Method chosen appropriate but (but doesn't note time period of interviews). Role of researcher considered	Ethical issues not discussed, clear how data analysis carried out but not whether more than one analyser, results only seemed to refer to one of research aims.	Shows how schools may find forest school difficult to add in (ethos). However doesn't discuss whether this would happen in all Forest Schools nor the benefit of Forest School as stated it would(listed elsewhere?).
Maynard (2007b)	3 FS practitioners	Semi-structured interviews	Method chosen appropriate but doesn't note time period of interviews. Role of researcher considered	Ethical issues not discussed, clear how data analysis carried out but not whether more than one analyser, results only seemed to refer to one of research aims.	Commonalities in what they feel are benefits but cant show that these benefits have occurred(cause and effect)
O'Brien (2009)	24 children observed age 3-9 years, 6 forest school practitioners (3 areas)	Observation of children from FS practitioners over 8 months	Method chosen could result in confirmation bias (themes chosen by practitioners first then observed), how parental questionnaires used not clear	Ethical considerations, data analysis and triangulation of findings all not clear/limited	Although results are some of the first of its kind, it is methodologically limited

O' Brien and Murray (2007)	24 children observed age 3-9 years, 6 forest school practitioners (3 areas). 9 parent interviews, one teacher interview, 6 children in informal focus group	Observation of children from FS practitioners over 8 months	Method chosen makes it difficult to distinguish changes with typical development and changes FS. Parental interviews not clear, nor role of researcher bias.	Ethical considerations-some but no committee. Some discussion contradictory evidence but data analysis process not clear, some triangulation but not clear.	Although results are some of the first of its kind, it is methodologically limited (same data as O'Brien, 2009)
Rigers, Knowles and Sayers (2012)	17 children one school (6 boys, 11 girls 6-7 years)	Focus group before and after 12 week forest school	Method clear	Analysis clear, number of researchers to check data, not necessarily triangulation as only data on children	Results very useful for children's perceptions , however quite small sample. Won't necessarily link to children being in school.
Waters and Bedgley (2007)	2 children (one identified as risk taker the other as risk hesitant) 1 boy, 1 girl aged 4 years 4 months	Child was observed for at least 30 minutes of free play in school and FS on two occasions, two months apart	Method clear	Analysis clear but data not really triangulated.	Useful in that compares to school setting and shows difference in child that didn't originally take risk. However only small exploratory study of two children. Generalises to all FS when maybe the sample is too small?

MacKinder (2017)	2 adult leaders, one child (aged 2-4 years)	Observation (field notes, audio recording, Leuven Child Involvement Scale and Adult Participation Scale); Interviews	Research design clear, however unclear why one child chosen and whether any bias in that. Unclear relationship researcher to participants	Ethics clear, statement of findings clear but not clear how data were selected.	Only one child however useful in terms of why Forest schools might result in different outcomes and the way the FS practitioner can influence behaviour and independent of child. Research design helpful in seeing cause and effect (comparative)
Elliott (2015)	18 staff, 77 parents from school. Done with one EYFS and then asking whether should extend	Unstructured interviews school staff. Questionnaire parents and school staff	Method of data collection could be appropriate but not discussed why chosen or how structured Relationship between researcher and participants not discussed	No ethics discussion, little data analysis, little triangulation of findings.	States cant be transferred to other areas as case study approach. Only highlights changes to the school itself and doesn't generalise further to other schools. Poor methodogy

Qualitative Methodological Review tool-CASP Questions

CASP Checklist: 10 questions to help you make sense of a Qualitative research

How to use this appraisal tool: Three broad issues need to be considered when appraising a qualitative study:

Are the results of the study valid? (Section A) What are the results? (Section B) Will the results help locally? (Section C)

The 10 questions on the following pages are designed to help you think about these issues systematically. The first two questions are screening questions and can be answered quickly. If the answer to both is “yes”, it is worth proceeding with the remaining questions. There is some degree of overlap between the questions, you are asked to record a “yes”, “no” or “can’t tell” to most of the questions. A number of italicised prompts are given after each question. These are designed to remind you why the question is important. Record your reasons for your answers in the spaces provided.

About: These checklists were designed to be used as educational pedagogic tools, as part of a workshop setting, therefore we do not suggest a scoring system. The core CASP checklists (randomised controlled trial & systematic review) were based on JAMA 'Users’ guides to the medical literature 1994 (adapted from Guyatt GH, Sackett DL, and Cook DJ), and piloted with health care practitioners.

For each new checklist, a group of experts were assembled to develop and pilot the checklist and the workshop format with which it would be used. Over the years overall adjustments have been made to the format, but a recent survey of checklist users reiterated that the basic format continues to be useful and appropriate.

Referencing: we recommend using the Harvard style citation, i.e.: *Critical Appraisal Skills Programme (2018). CASP (insert name of checklist i.e. Qualitative) Checklist. [online] Available at: URL. Accessed: Date Accessed.*

Paper for appraisal and reference:

Section A: Are the results valid?

1. Was there a clear statement of the aims of the research?

Yes ☐
Can't Tell ☐
No ☐

HINT: Consider
- what was the goal of the research
- why it was thought important
- its relevance

Comments:

2. Is a qualitative methodology appropriate?

Yes ☐
Can't Tell ☐
No ☐

HINT: Consider
- If the research seeks to interpret or illuminate the actions and/or subjective experiences of research participants
- Is qualitative research the right methodology for addressing the research goal

Comments:

Is it worth continuing?

3. Was the research design appropriate to address the aims of the research?

Yes ☐
Can't Tell ☐
No ☐

HINT: Consider
- if the researcher has justified the research design (e.g. have they discussed how they decided which method to use)

Comments:

4. Was the recruitment strategy appropriate to the aims of the research?

Yes ☐
Can't Tell ☐
No ☐

HINT: Consider
- If the researcher has explained how the participants were selected
- If they explained why the participants they selected were the most appropriate to provide access to the type of knowledge sought by the study
- If there are any discussions around recruitment (e.g. why some people chose not to take part)

Comments:

5. Was the data collected in a way that addressed the research issue?

Yes ☐
Can't Tell ☐
No ☐

HINT: Consider
- If the setting for the data collection was justified
- If it is clear how data were collected (e.g. focus group, semi-structured interview etc.)
- If the researcher has justified the methods chosen
- If the researcher has made the methods explicit (e.g. for interview method, is there an indication of how interviews are conducted, or did they use a topic guide)
- If methods were modified during the study. If so, has the researcher explained how and why
- If the form of data is clear (e.g. tape recordings, video material, notes etc.)
- If the researcher has discussed saturation of data

Comments:

6. Has the relationship between researcher and participants been adequately considered?

Yes ☐
Can't Tell ☐
No ☐

HINT: Consider

- If the researcher critically examined their own role, potential bias and influence during (a) formulation of the research questions (b) data collection, including sample recruitment and choice of location
- How the researcher responded to events during the study and whether they considered the implications of any changes in the research design

Comments:

Section B: What are the results?

7. Have ethical issues been taken into consideration?

Yes ☐
Can't Tell ☐
No ☐

HINT: Consider

- If there are sufficient details of how the research was explained to participants for the reader to assess whether ethical standards were maintained
- If the researcher has discussed issues raised by the study (e.g. issues around informed consent or confidentiality or how they have handled the effects of the study on the participants during and after the study)
- If approval has been sought from the ethics committee

Comments:

8. Was the data analysis sufficiently rigorous?

Yes ☐
Can't Tell ☐
No ☐

HINT: Consider
- If there is an in-depth description of the analysis process
- If thematic analysis is used. If so, is it clear how the categories/themes were derived from the data
- Whether the researcher explains how the data presented were selected from the original sample to demonstrate the analysis process
- If sufficient data are presented to support the findings
- To what extent contradictory data are taken into account
- Whether the researcher critically examined their own role, potential bias and influence during analysis and selection of data for presentation

Comments:

9. Is there a clear statement of findings?

Yes ☐
Can't Tell ☐
No ☐

HINT: Consider whether
- If the findings are explicit
- If there is adequate discussion of the evidence both for and against the researcher's arguments
- If the researcher has discussed the credibility of their findings (e.g. triangulation, respondent validation, more than one analyst)
- If the findings are discussed in relation to the original research question

Comments:

Section C: Will the results help locally?

10. How valuable is the research?

HINT: Consider

- If the researcher discusses the contribution the study makes to existing knowledge or understanding (e.g. do they consider the findings in relation to current practice or policy, or relevant research-based literature
- If they identify new areas where research is necessary
- If the researchers have discussed whether or how the findings can be transferred to other populations or considered other ways the research may be used

Comments:

Appendix B: Methodological Review- Mixed Methods Studies

Mixed Methods Appraisal tool (MMAT):

Hong QN, Pluye P, Fàbregues S, Bartlett G, Boardman F, Cargo M, Dagenais P, Gagnon M-P, Griffiths F, Nicolau B, O'Cathain A, Rousseau M-C, Vedel I. Mixed Methods Appraisal Tool (MMAT), version 2018. Registration of Copyright (#1148552), Canadian Intellectual Property Office, Industry Canada.

Study	Participant Group	Data Collection Method	Quant Methodology	Qual methodology	Integration of data	Will the results help
McCree, Cutting and Sherwin (2018)	11 children 5-7 on entry . FS practitioners, teachers, parents of these cyp.	Wellbeing and nature connection questionnaire, teacher assessment data, fieldwork observation, focus groups, questionnaire and interviews (children)	Some risk of non response bias parental questionnaires, didn't do statistical differences only mean difference analysis. Seems overall ok.	Discusses how themes generated, discusses explanation around contradictory data, Some data when done for longer not as helpful	Yes	Although only 11 children, very helpful as lots of different data sources. Also shows difference compared to those who didn't do FS (more helpful) so less likely to be due to
Richardson (2014)	Two groups of children took part, with 8 children in each group. Of these 16 children, 5 (31%) were girls and 11 (69%) were boys.	Assessments of speech and language pre and post, semi-structured interviews parents and nursery keyworkers	Confounders not listed and cause and effect difficult to gather. Measurement tools seem ok.	Not clear if interpretations are ok as not much evidence for data and some sweeping conclusions	Not enough data to know but seems so.	Speech and language not addressed in other studies but lot of methodology and data not listed

Savery, Cain, Garner, Jones, Kynaston, Mould, Nicholson, Proctor, Pugh, Rickard & Wilson (2017)	Interviewed 23 parents, 22 practitioners and 37 children; completed questionnaires were received from 191 practitioners and 122 parents.	Quantitative Likert Scale questionnaire on risk to parents and practitioners. Structured Interviews with children (limited data), parents and practitioners	Likert Scale addressed risk around FS specific activities not risk that could be generalised? Parent findings questionnaire not significant	Yes but some interpretations of data could be argued as too big of a jump from data presented	Largely yes	Some changes in perceptions of risk found but methodology has limitations. Findings appear very specific to risk in FS environment, generalisation appears limited.
Tiplady and Menter (2020)	five children enrolled in the ARC the children were aged 5, 8, 10, 10 and 10 years at the start of the project. 11 Specialist provision pupils (aged 12 to 13 years) (n=16).	Semi-Structured interviews with 4 parents and unknown number FS practitioner and school staff. Student behavioural data. Interviews with YP.	Reports much more quant methodology than is reported in paper. Only behavioural data of 4 pupils given. and no statistical analysis. Questionnaire from pupils in appendix and not referred to.	Methodology clear, interpretations/analysis clear	Because little quant not really	Differences not found as much in the classroom. Quant data limited. Qual data useful suggests positive impact FS on wellbeing and self-esteem.

Mixed Methods Appraisal Tool (MMAT) Example

Category of study designs	Methodological quality criteria	Responses			
		Yes	No	Can't tell	Comments
Screening questions (for all types)	S1. Are there clear research questions?				
	S2. Do the collected data allow to address the research questions?				
	Further appraisal may not be feasible or appropriate when the answer is 'No' or 'Can't tell' to one or both screening questions.				
1. Qualitative	1.1. Is the qualitative approach appropriate to answer the research question?				
	1.2. Are the qualitative data collection methods adequate to address the research question?				
	1.3. Are the findings adequately derived from the data?				
	1.4. Is the interpretation of results sufficiently substantiated by data?				
	1.5. Is there coherence between qualitative data sources, collection, analysis and interpretation?				
2. Quantitative randomized controlled trials	2.1. Is randomization appropriately performed?				
	2.2. Are the groups comparable at baseline?				
	2.3. Are there complete outcome data?				
	2.4. Are outcome assessors blinded to the intervention provided?				
	2.5 Did the participants adhere to the assigned intervention?				
3. Quantitative non-randomized	3.1. Are the participants representative of the target population?				
	3.2. Are measurements appropriate regarding both the outcome and intervention (or exposure)?				
	3.3. Are there complete outcome data?				
	3.4. Are the confounders accounted for in the design and analysis?				
	3.5. During the study period, is the intervention administered (or exposure occurred) as intended?				

4. Quantitative descriptive	4.1. Is the sampling strategy relevant to address the research question?				
	4.2. Is the sample representative of the target population?				
	4.3. Are the measurements appropriate?				
	4.4. Is the risk of nonresponse bias low?				
	4.5. Is the statistical analysis appropriate to answer the research question?				
5. Mixed methods	5.1. Is there an adequate rationale for using a mixed methods design to address the research question?				
	5.2. Are the different components of the study effectively integrated to answer the research question?				
	5.3. Are the outputs of the integration of qualitative and quantitative components adequately interpreted?				
	5.4. Are divergences and inconsistencies between quantitative and qualitative results adequately addressed?				
	5.5. Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?				

Appendix C: Participant Information Sheets

Department of Education and Training
Tavistock Centre
120 Belsize Lane
London
NW3 5BA
www.tavistockandportman.nhs.uk

Tel: +44 (0) 20 7435 7111

Information Sheet [Parents]

Title: Children's learning during lockdown: Does previous attendance at Forest School change how children learnt during lockdown?

What is the aim of the research?
The COVID-19 pandemic has resulted in significant changes to how children have accessed education, with the majority of children accessing school work from home during this period. Before the pandemic schools had been increasingly adopting a Forest School approach as part of their curriculum. Forest School research has suggested that Forest School creates more resilient, self-directed learners. This research, therefore, looks to explore whether children that had previously participated in a Forest School, were more likely to find ways to adapt during this period. It will look at whether these children accessed a greater amount of learning independently, found more creative ways to take up learning and utilised outdoor spaces to a greater extent, during this period.

Who can take part in this research?
I am looking for parents whose children are aged between 4-11 and have been accessing education from home during the school closure period. These parents may have been required to do this because they did not come under the key worker category or they may have chosen to keep their children at home for other reasons. One group of children will need to have consistently attended a Forest School programme (ideally weekly) for 6 months or more before the school closure. They will need to have attended Forest School as part of their school day and not at an after-school club or on a weekend. This will be classified as the 'experimental' group. The other group of children will need to have never attended a Forest School programme.

What does participation involve?
Parental survey: You will be asked to participate in an anonymous online survey which will ask you questions about how your child has been learning during lockdown, how often, what has been difficult and how you may have adapted. You will be asked whether your child has previously participated in a Forest School and if they did, what this was like for them.
You will also be asked some questions about you such as your gender, age, employment status and whether your child receives free school meals. You will be asked these questions so that we can take into consideration anything that might have been going on in your family at the time that would have made it harder for you to assist your child with learning.

Please follow the link to the survey here:
https://essex.eu.qualtrics.com/jfe/form/SV_dnb1ZWeKYXgkDGJ

Parent and child interviews: A smaller number of parents will also be invited to be interviewed about their child's experiences of education during this time. We will also ask the children themselves how they have found the experience. Only those that have previously participated in

a Forest School will be invited to be interviewed. Interviews will take place over the phone or over an online video platform such as Zoom and will last up to an hour.

I will make audio recordings of the meetings which will be transcribed for analysis and then deleted. In addition, I will keep a reflective diary of my experiences as a researcher to support analysis. You will not be named in your responses in any write up. Data generated in the course of the research will be retained in accordance with the Tavistock and Portman NHS Trust Data protection policy.

Who has given permission for this research?
The Tavistock and Portman NHS Foundation Trust has given ethical approval to carry out this research. The Local Authority Educational Psychology Service where the research will take place has also given permission.

What are the possible benefits of taking part?
The closure of schools, let alone the COVID-19 pandemic has had a considerable impact on the way we live and the way our children are educated. It is hoped the research will give you time to explore your feelings and experiences of your child's learning during this period. It will give you opportunity to reflect on how you've adapted during this period and how your child may have used their previous experience to assist them.
You may also find it useful to gain a greater understanding of your child's strengths and difficulties and support you can give them in their future learning.

What are the possible risks of taking part?
Having an opportunity to discuss yours and your child's experiences during this unprecedented time may bring up feelings of anger and disappointment that you did not realise were there. This is perfectly normal and within the meetings, the open-ended nature of the questions will give you freedom in choosing what to share; you do not have to share anything you are not comfortable with. There will also be options to access additional supervision and/or support from other services if this is required.

What will happen to the findings from the research?
The findings will be typed up as part of my thesis which will be read by examiners and be available at the Tavistock and Portman library. I may also publish the research at a later date in a peer reviewed journal. You will have the option to read a summary of my findings or the full thesis once the analysis has been completed.

What will happen if I don't want to carry on with this research?
Participation in this research is voluntary and you and/or your child are free to withdraw from the research at any time before analysis, without giving a reason. Any research data collected before your withdrawal may still be used, unless you request that it is destroyed.

Will my taking part in this study be kept confidential?
Yes. All records related to your participation in this research study will be handled and stored securely on an encrypted drive using password protection. Your identity on these records will be indicated by a pseudonym rather than by your name. The data will be kept for a minimum of 5 years. Data collected during the study will be stored and used in compliance with the UK Data Protection Act (2018) and the University's Data Protection Policy.

Are there times when my data cannot be kept confidential?
Confidentiality is subject to legal limitations or if a disclosure is made that suggests that imminent harm to self and/or others may occur. To protect your identity an ID code will be used and any identifiable details changed.

Who is doing the research?
My name is Sarah Content. I am a trainee Educational Psychologist (EP) in my second year of studying for the Doctorate in Educational and Child Psychology. I am carrying out this research

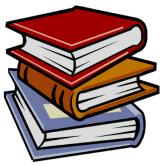
as part of my course. If you have any questions or concerns about any aspect of the research, please contact me at SContent@tavi-port.nhs.uk

If you have any concerns about the research then you can also contact my research supervisor, Dr XX, who works for the Tavistock and Portman research department XX

Alternatively, you may also contact XX

Information sheet children

What is a study?



A research study is what you do when you want to learn about something or find out something new

Why is this study being done?

I am doing this study to find out what its been like for you to learn while your school has been closed. I wanted to see whether you were able to use some of the things you learnt at Forest School to help you while you have been at home. Some children have found it hard during this time and this study is being done so adults can work out how to help you in the future. You won't get told off by the adults if you say you have found it hard to learn whilst school has been closed.

What will happen if I take part?

1) If you are able you will be asked to write your name on a form to say you understand the study and what will happen. You will be given a copy of the form to keep and this leaflet.
2) You will be asked to do some different questions about your learning whilst your school has been closed.
3) We'll also ask your parent how Forest school has helped with your learning. You don't need to worry about this as it's not a test, I just want to see whether Forest School can help other children too.

Do I have to say yes?

No not at all, it's up to you!
If you say yes and then change your mind that's also ok. It won't impact what your teachers or parents think of you and do for you.

What shall I do now?

Now you know about the study you can think about whether you want to take part

Who else can I ask about this?

My name is Sarah and you can ask me any questions you want about the study. You can also ask your mum, dad or teacher about the study.

Thank you!

Appendix D: Participant consent form

The Tavistock and Portman NHS
NHS Foundation Trust

Department of Education and Training
Tavistock Centre
120 Belsize Lane
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NW3 5BA
www.tavistockandportman.nhs.uk

Tel: +44 (0) 20 7435 7111

Research project: **Children's learning during lockdown: Does previous attendance at Forest School change how children learnt during lockdown?**

Parent's name _____

Child's name _____

Child's Date of Birth _____

School _____

I confirm I have read the information sheet and understand what is involved in participation of this study, including benefits and risks. ☐

I confirm I understand I have the right to withdraw myself or my child at any time ☐

I confirm I understand participation or non-participation in the study will not affect whether my child attends Forest School or the schooling of my child ☐

Child interview

I give consent for my child to take part in an interview discussing their experience of education during the COVID-19 school closure period. ☐

Parent Interview

I would like to take part in a short 40-50 minute interview discussing my thoughts on my child's education during the COVID-19 school closure period ☐

Contact number/email:

Please could this consent form be returned to the school Forest School Lead XX by XX

If you have any further questions or concerns about this consent form please do not hesitate to contact me on X

Appendix E: Survey Questions

This research aims to capture what children's learning was like during lockdown and whether particular factors (such as participation in a Forest School prior to lockdown) have helped children with their learning during this time.

All responses will be confidential and treated non-judgmentally by the researchers. We understand that there have been numerous barriers to learning during this time and that many parents and children have understandably found it difficult to adapt. Please do be honest with your responses as this will help us understand better how to support children's education and home learning in the future.

Please only refer to one child at a time in your responses. If you have multiple children aged 6-11 years who have been educated at home during this time please fill out an additional questionnaire for each child.

If you have any questions or concerns about the survey please contact the lead researcher XX or alternatively XX. This research has been approved by the Tavistock and Portman NHS Trust Research committee.

Has your child been accessing education from home, for the majority of the time, during the COVID-19 lockdown? (Rather than still attending the educational setting)

- Yes
- No

Approximately how many months was your child educated at home during the COVID-19 pandemic (please round to nearest month)

- 1
- 2
- 3
- 4
- 5
- 6
- Other

Has your child previously participated in a regular Forest School programme, prior to lockdown?

- Yes
- No

Was this programme weekly and ran for at least 6 months?

- Yes
- No.

Please tell us how often and for how long your child's Forest School ran for in the text box below.

What school Year is your child in (Please refer to year your child was in Autumn 19-Summer 20).

- EYFS
- Year 1
- Year 2
- Year 3
- Year 4
- Year 5
- Year 6

What gender is your child?

Male

Female

Not specified/prefer not to say

Does your child receive free school meals?

Yes

No

Does your child have an identified special educational need?

Yes

No

On average how many hours per day did your child spend accessing the school curriculum/work set by their school at home? (during term time only)

- <1
- 1
- 2
- 3
- 4
- 5
- 6
- >6

On average how many hours per day did your child spend accessing learning outside of the school curriculum/work set by school at home? (For example activities and games that you feel helped your child learn skills and abilities that will help them in their future education but that was not set by your child's school).

- <1
- 1
- 2
- 3
- 4
- 5
- 6
- >6

How many hours did your child spend learning independently, for example without an adult sitting with them

<1

1

2

3

4

5

6

>6

How often did your child come up with their own learning activity during this period? They can have carried this activity out on their own or with others but must have come up with the activity themselves. Please choose the closest response

- Daily
- 2 times a week
- Once a week
- Once a fortnight
- Once a month
- Almost never
- Never

On average, how many hours a week did your child spend learning in an outside space during this period? (This doesn't have to be school curriculum based but where you felt that they were learning)

How difficult did you find it educating your child during this period?

- Extremely easy
- Somewhat easy
- Neither easy nor difficult
- Somewhat difficult
- Extremely difficult

How do you think your child found learning during this period?

- Extremely easy
- Somewhat easy
- Neither easy nor difficult
- Somewhat difficult
- Extremely difficult

How do you think your child managed their emotional wellbeing/emotions during this period?

- Extremely well
- Very well
- Somewhat well
- Not so well
- Not well at all

How well do you feel your child was able to concentrate on learning tasks during this period?

- Extremely well
- Very well
- Somewhat well
- Not so well
- Not well at all

How well do you feel your child was able to co-operate with other people in your household during this period?

- Extremely well
- Very well
- Somewhat well
- Not so well
- Not well at all

Was there anything that your child learnt in Forest School that you feel helped them during this period?

Appendix F: Child Interview Questions

Can you tell me about Forest School? What do you do in Forest School?

How long have you been going to Forest School?

When do you go to Forest School? Is it in school time?

What do you like about it?

Is there anything you don't like about it?

How do you feel when you do Forest School?

Does that feeling last when you go home? Or when you go back into school?

What have you learned in Forest School or got better at?

Has that helped you when you are at home

What about school? What do you like at school?

Now I'm going to ask some questions about something that happened a few months ago so don't worry if you can't remember we're just going to try our best.

Do you remember all the way before the summer holiday when the schools were closed to keep you safe and learn at home?

How did you find being at home?

Was it easy to learn at home? Was it hard or was it somewhere in the middle?

Did you do any learning outside when you were at home?

Was there any activities you did in Forest School that you did at home?

Did you learn on your own or did you learn with an adult when you were at home?

If your friend had to learn at home as well could you think of anything we could tell them that might make them feel a bit happier about having to learn at home?

Is there anything else you want to tell me about Forest School or learning?

Appendix G: Parent Interview questions

Are you able to tell me a bit about your child's Forest School experience before the school closure period (What did they do in Forest School? Did they enjoy it? When did they go?)

And what about their school experience before lockdown (Did they enjoy school? Do they find it hard? What lessons do they like?)

Can you tell me a bit about how your child's school worked during lockdown? (When did your child stop attending, return, how many other children in school still etc)

Can you tell me a bit about how your child found doing school work/learning during lockdown? (Could they concentrate? Did they get upset? Did they get bored? Did they ever learn on their own?)

Can you tell me what helped them learn during this time?

Can you tell me what got in the way?

Can you name any specific examples of where your child overcame a problem during lockdown because of a skill they had learned at Forest School? (being able to ask for help, being able to tolerate when something was difficult and keep trying, coming up with an idea of how to learn)

More specifically do you feel Forest School had an effect on how your child worked during lockdown (utilising more outdoor space, working without your help, feeling confident in themselves)

What skills do you feel your child has learned from Forest School

What ways do you feel your child has developed since doing Forest School?

Do you think Forest School is worth the schools money and resources? Why?

Do you think Forest School supports all children's learning or does it only benefit some children

Do you think that Forest School would benefit even more particular groups of children (those that struggle with language, those that struggle with friendships, those that struggle with confidence)

Is there anything else you want to tell me about your child's experience of Forest School and/or their experience of learning during lockdown?

Appendix H: Initial Ethics Approval

From: Paru Jeram
Sent: 02 April 2020 15:33
To: Sarah Content
Cc: Adam Styles; Academic Quality; Christopher Arnold
Subject: Research Ethics Application

Dear Sarah,

I am pleased to inform you that subject to formal ratification by the Trust Research Ethics Committee (TREC) your application has been approved. This means you can proceed with your research.

Please note that any changes to the project design including changes to methodology/data collection etc, must be referred to TREC as failure to do so, may result in a report of academic and/or research misconduct.

If you have any further questions or require any clarification do not hesitate to contact me.

May I take this opportunity of wishing you every success with your research.

Regards,

Paru
Mrs Paru Jeram
Quality Assurance Officer
(Research Degrees and Research Ethics)
Academic Governance and Quality Assurance (Room 259)
The Tavistock and Portman NHS Foundation Trust
120 Belsize Lane
London
NW3 5BA
Tel: +44 (0)20 8938 2699

Appendix I : Ethics Approval in light of COVID-19 pandemic changes

From: Paru Jeram
Sent: 27 July 2020 09:41
To: Sarah Content
Cc: Adam Styles; Academic Quality; Christopher Arnold
Subject: Research Ethics Application

Dear Sarah,

I can confirm that I have received your updated TREC documentation in light of the current crisis and that the changes have been approved. You may proceed with your research.

For information governance purposes and in line with the Trust policies, please be advised that in order to conduct research/interviews using online video conferencing you must contact TEL (copied) to set up a zoom account. With regards to privacy, please ensure that meetings with yourself and your participants are conducting in a safe environment and that confidentiality is maintained.

Your updated TREC form is attached

Kind regards,

Paru
Mrs Paru Jeram
Senior Quality Assurance Officer
(Research Degrees and Research Ethics)
Academic Governance and Quality Assurance (Room 259)
The Tavistock and Portman NHS Foundation Trust
120 Belsize Lane
London
NW3 5BA
Tel: +44 (0)20 8938 2699

https://tavistockandportman.nhs.uk/research-and-innovation/doing-research/student-research/

Change to Doctoral Research Protocol 2019/20

Student name	Sarah Content
Date	01/07/20
Doctoral programme	M4
Supervisor(s)	Chris Arnold
Has ethical approval been granted? Please include process (TREC/UREC/IRAS) and date	TREC 2/4/20
Please state clearly and simply the proposed changes to your project (methods of data gathering, changes to design etc)	

Due to the ongoing covid-19 pandemic and the impacts this has had on children's education, my supervisor and I felt it was no longer appropriate to continue with my original research proposal. I had originally intended to capture learning and language assessment data as children start a Forest School programme (baseline) and 6 months later to capture progress.
The Forest school approach promotes child directed learning and has evidence to suggest it helps children become more self-motivated, creative and adaptive (Knight, 2009; Coates &Pimlott-Wilson, 2019). I therefore now want to explore whether children that had previously attended a Forest School were more able to find creative ways to work at home, were more able to work independent and were more able to utilise outdoor space, during lockdown. This is an experience that has already happened whereas it is not guaranteed that Forest Schools will re-open in September, which was needed for my original research proposal.
I wish to send out a survey to parents of children who had partaken in Forest School prior to lockdown (experimental group) and to parents of children who have been schooled at home but had not previously participated in Forest School (comparison group). This will be done by an online survey platform approved by the Tavistock.

I also wish to interview 10 parents and 10 children to ask them about how their child/themselves has been learning during lockdown, how often, what has been difficult and how they have used their prior Forest School experience to assist them. This will be done via the online platform Zoom.

Please be advised that if the change pertains to methods of data gathering the viva remotely by Zoom 1. Please ask the student if they are happy with the viva environment; if they are alone and if they are assured that they are in a location where they will not be disturbed for the duration of viva 2. Please ask if the student has any concerns about WIFI or the technology which may cause disruption to the viva. Please ask if the student is willing to share their mobile number so that they are contactable in case there is a disruption during the viva In preparation for the viva, please have the hard/electronic copy of the viva in front of you so that you can refer to it when needed. If you have any problems during the day, Simon and I will be at hand to support you. Please email academic quality@tavi-port.nhs.uk or call me on 07802543834 in the first instance. We will of course join you via zoom at the beginning of proceedings to ensure you have everything you need. Please be reminded that any issues re Zoom should be directed to me in the first instance.
Please return this form as directed by your supervisor or course lead You **must** ensure any changes are also approved by your ethical approval body before you start work

Tavistock and Portman Trust Research Ethics Committee (TREC)

APPLICATION FOR ETHICAL REVIEW OF RESEARCH INVOLVING HUMAN PARTICIPANTS

This application should be submitted alongside copies of any supporting documentation which will be handed to participants, including a participant information sheet, consent form, self-completion survey or questionnaire.

Where a form is submitted and sections are incomplete, the form will not be considered by TREC and will be returned to the applicant for completion.

For further guidance please contact Paru Jeram (academicquality@tavi-port.nhs.uk)

SECTION A: PROJECT DETAILS

Project title	**Children's learning during lockdown: Does previous attendance at Forest School change how children learnt during lockdown?**		
Proposed project start date	Feb 2020	**Anticipated project end date**	May 2021

SECTION B: APPLICANT DETAILS

Name of Researcher	Sarah Content
Email address	scontent@tavi-port.nhs.uk
Contact telephone number	07931311297

SECTION C: CONFLICTS OF INTEREST

Will any of the researchers or their institutions receive any other benefits or incentives for taking part in this research over and above their normal salary package or the costs of undertaking the research? **YES ☐ NOX** If **YES**, please detail below:
Is there any further possibility for conflict of interest? YES ☐ NO X If **YES**, please detail below:

FOR ALL APPLICANTS

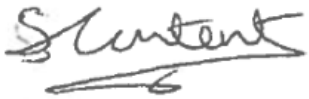
'Is your research being commissioned by and or carried out on behalf of a body external to the trust? (for example; commissioned by a local authority, school, care home, other NHS Trust or other organisation). *Please note that 'external' is defined as an organisation which is external to the Tavistock and Portman NHS Foundation Trust (Trust)	**YES ☐ NO X NA ☐**
If **YES**, please supply details below:	
Has external* ethics approval been sought for this research? **(i.e. submission via Integrated Research Application System (IRAS) to the Health Research Authority (HRA) or other external research ethics committee)** *Please note that 'external' is defined as an organisation/body which is external to the Tavistock and Portman Trust Research Ethics Committee (TREC) If **YES**, please supply details of the ethical approval bodies below **AND** include any letters of approval from the ethical approval bodies:	**YES ☐ NO X**
If your research is being undertaken externally to the Trust, please provide details of the sponsor of your research? NA	
Do you have local approval (this includes R&D approval)?	**YES ☐ NO ☐ NA X**

SECTION D: SIGNATURES AND DECLARATIONS

APPLICANT DECLARATION

I confirm that:

- The information contained in this application is, to the best of my knowledge, correct and up to date.
- I have attempted to identify all risks related to the research.
- I acknowledge my obligations and commitment to upholding our University's Code of Practice for ethical research and observing the rights of the participants.
- I am aware that cases of proven misconduct, in line with our University's policies, may result in formal disciplinary proceedings and/or the cancellation of the proposed research.

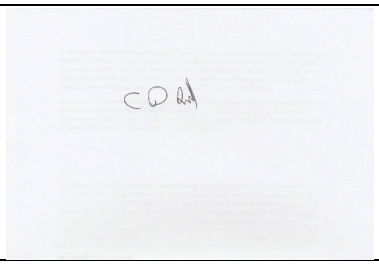
Applicant (print name)	Sarah Content
Signed	
Date	24/2/20

FOR RESEARCH DEGREE STUDENT APPLICANTS ONLY

Name of Supervisor	Dr C Arnold
Qualification for which research is being undertaken	Doctorate in Child community and Educational Psychology

Supervisor –

- Does the student have the necessary skills to carry out the research?
  YES x☐ NO ☐
- Is the participant information sheet, consent form and any other documentation appropriate?
  YES x☐ NO ☐
- Are the procedures for recruitment of participants and obtaining informed consent suitable and sufficient?
  YES x☐ NO ☐
- Where required, does the researcher have current Disclosure and Barring Service (DBS) clearance?
  YES x☐ NO ☐

Signed	
Date	25.2.20

COURSE LEAD/RESEARCH LEAD

- Does the proposed research as detailed herein have your support to proceed?
  YES ☒ NO ☐

Signed	
Date	27.02.2020

SECTION E: DETAILS OF THE PROPOSED RESEARCH

1. Provide a brief description of the proposed research, including the requirements of participants. This must be in lay terms and free from technical or discipline specific terminology or jargon. If such terms are required, please ensure they are adequately explained (Do not exceed 500 words)

The research will monitor children's experience and uptake of education during lockdown. It will explore whether children who have participated in a forest school prior to lockdown (experimental group) had different educational experiences in lockdown to those that haven't (control group).

Parents will be asked to participate in an anonymous online survey which asks questions about how their child has been learning during lockdown, how often, what has been difficult and how they adapted. They will be asked whether their child has previously participated in a Forest School and if they did, what this was like for them.

Those who are able to comment on the experience of childrens education during lockdown such as parents, and children themselves will also be interviewed. Interviewees will be asked for their perceptions on their child's learning and how they feel Forest School has influenced this over the lockdown period. Interviews will take place over the online portal Zoom.Interviews will be recorded and transcribed and then analysed for themes using thematic analysis.

2. Provide a statement on the aims and significance of the proposed research, including potential impact to knowledge and understanding in the field (where appropriate, indicate the associated hypothesis which will be tested). This should be a clear justification of the proposed research, why it should proceed and a statement on any anticipated benefits to the community. (Do not exceed 700 words)

The current research base for Forest Schools is small and that which has been carried out, has serious methodological limitations. For example, it is often anecdotal (Slade, Lowrey &Bland, 2013), often not rigorously reviewed, and at times could be argued to be bias, being carried out by Forest Schools themselves (Cohen, Manion & Morrison, 2011). With the rapid recent development and popularity of Forest Schools in the UK (Leather, 2018; Lightfoot, 2019) as well as the creation of the UKs first full time forest school (Ackerman, 2019) it is imperative we must investigate this further.

Of the more methodologically rigorous and peer reviewed research that is available, even fewer studies have been within the EP profession and those that are have focused on the perspectives of children and parents involved, rather than academic outcomes (Bradley and Male, 2015; Coates &Pimlott, 2019). Although it is important to gather the perspectives of those involved and give them a voice, capturing whether they enjoy the learning of forest school, this does not capture the outward visible impact. With low academic attainment being linked to poorer future employment outcomes and earnings, including a greater likelihood of entering physically dangerous occupations (Feinstein et al., 2006) if FS is found to be linked to lower educational outcomes this knowledge must be shared with families and the community.

On the other hand, if Forest School is found to improve or help facilitate learning and academic outcomes, then this also must be shared with the community, particularly if at present it is more likely that pupils in high deprivation schools have fewer opportunities for out-of-classroom education, such as Forest School (National Foundation for Education Research, 2006). More specifically as language is often the vehicle for learning and children with lower levels of language are at higher risk of difficulties with reading, writing and spelling (The Communication Trust, n.d) if

participation in Forest Schools leads to differences in language outcomes, this must be shared with the community.

The research could contribute to future Educational Policy and curriculum structure, including the amount of free time that children are allocated in education, to engage in their own self-initiated activities and play (as is the focus in FS). This is particularly important considering play has been linked to children's cognitive and physical development and emotional wellbeing (Whitebread, Basilo, Kuvalja & Verma, 2012; Whitebread, 2017). The research also may help wider local and national policies, such as environmental and school planning (e.g. access to number of trees or woodlands).

In the few studies that have explored the academic impact of Forest School the results have been promising. McCreee, Cutting and Sherwin (2018) found significant improvements in reading and writing in 5-7 year olds that participated in a weekly FS compared to those that didn't (groups were matched and measured across a year timeframe). Kenny (2010) found significant differences in engagement in learning and wellbeing following FS, both of which can lead to higher academic attainment. Roe and Aspinall (2011) also found increased attention, emotional wellbeing and engagement with learning in a Forest School for boys that struggled with a 'typical' school environment.

. The study will focus on the primary school age group in a mainstream school to explore whether Forest School is a pedagogy or 'intervention' that can impact attainment in a larger number of children. This topic will be reviewed with the aim to be able to impact future EP practice. The overall question to be kept in mind for the research will be 'Should EPs be recommending the FS provision to schools and parents they are working with?'.

3. Provide an outline of the methodology for the proposed research, including proposed method of data collection, *tasks* assigned to participants of the research and the proposed method and duration of data analysis. If the proposed research makes use of pre-established and generally accepted techniques, please make this clear. (Do not exceed 500 words)

The proposed research is a mixed methods design and will adopt a realist ontology and an objectivist epistemology.

Parents will be asked to participate in an anonymous online survey which asks questions about how their child has been learning during lockdown, how often, what has been difficult and how they may have adapted. They will be asked whether their child has previously participated in a Forest School and if they did, what this was like for them. The online survey platform will be approved by the Tavistock

parents of children who have participated in forest school and children will be interviewed in a semi-structured interview format. Interview questions will be created by the researcher, using information from prior research. Interviews will be transcribed and analysed by thematic analysis. It is anticipated each interview will take 40-50 minutes.

SECTION F: PARTICIPANT DETAILS

4. Provide an explanation detailing how you will identify, approach and recruit the participants for the proposed research, including clarification on sample size and location. Please provide justification for the exclusion/inclusion criteria for this study (i.e. who will be allowed to / not allowed to participate) and explain briefly, in lay terms, why this criteria is in place. (Do not exceed 500 words)

Forest School practitioners registered with the Forest School Association in the authors local authority (and if necessary neighbouring local authorities) will be contacted by email to enquire which mainstream primary schools are currently running or due to run a Forest School programme. A web

search by the author will also explore which local primary schools are advertising they run a Forest School programme. Only schools which run, or are due to run the programme regularly and for some of the school week (rather than an independent full time Forest School provision) will be included. Recruitment will occur through schools rather than through a Forest School in order to try and reduce the number of factors that may be different between control and Forest School/experimental groups (same school setting, same Forest School setting attended). Mainstream education settings were chosen in order for the research sample to have the greatest generalisability. Primary education settings were chosen as the research shows these have a greater uptake of Forest School than Secondary.

Once these schools have been identified the senior leadership team of each school will be contacted, provided with information about the project and asked whether they wish to participate. Only schools who offer a Forest School programme that is in line with the principles of the Forest School Association will be approached. A fidelity check will also later be carried out by the author to check whether the Forest School is in line with the principles outlined by an observation/visit to the Forest School from the author.
Survey Participants will be required to be have children aged 6 years or over (Years 2-6) first of these groups will have consented to participate in a Forest School programme prior to the research beginning. The second, or 'control' group, will have children who never participated in a Forest school programme. The interview participants will be parents (or the children themselves) of children aged 6-11 also.

The parents of children in these two groups will be contacted online via the letter/email. This letter will be disseminated by the school leadership team and so the researcher will not have access to who is in either of these groups at this point of the project.

Around ten children will be required for interviews and 10 parents, the survey will be advertised to as many parents as possible. In the case of more than this responding for the interviews, parents will be informed that recruitment will be on a first come first served basis. In the event that not enough participants can be gathered from one school, additional schools will be contacted and the recruitment process repeated. Although it is acknowledged that the sample size is limited it is likely that a bigger sample size would not be feasible within the researcher's capacity.

Demographic information will be taken from all participants, including gender and age. Free School Meal percentages for the whole school will also be requested (these will not be requested from individual participants).

5. Will the participants be from any of the following groups?*(Tick as appropriate)*

☐ Students or staff of the Trust or the University.
X Adults (over the age of 18 years with mental capacity to give consent to participate in the research).
X Children or legal minors (anyone under the age of 16 years)[1]
☐ Adults who are unconscious, severely ill or have a terminal illness.
☐ Adults who may lose mental capacity to consent during the course of the research.
☐ Adults in emergency situations.
☐ Adults[2] with mental illness - particularly those detained under the Mental Health Act (1983 & 2007).
☐ Participants who may lack capacity to consent to participate in the research under the research requirements of the Mental Capacity Act (2005).
☐ Prisoners, where ethical approval may be required from the **National Offender Management Service (NOMS).**
☐ Young Offenders, where ethical approval may be required from the National Offender Management Service (NOMS).
☐ Healthy volunteers (in high risk intervention studies).
☐ Participants who may be considered to have a pre-existing and potentially dependent[3] relationship with the investigator (e.g. those in care homes, students, colleagues, service-users, patients).
☐ Other vulnerable groups (see Question 6).
☐ Adults who are in custody, custodial care, or for whom a court has assumed responsibility.

☐ Participants who are members of the Armed Forces.

[1]If the proposed research involves children or adults who meet the Police Act (1997) definition of vulnerability[3], any researchers who will have contact with participants must have current Disclosure and Barring Service (DBS) clearance.
[2] 'Adults with a learning or physical disability, a physical or mental illness, or a reduction in physical or mental capacity, and living in a care home or home for people with learning difficulties or receiving care in their own home, or receiving hospital or social care services.' (Police Act, 1997)
[3] Proposed research involving participants with whom the investigator or researcher(s) shares a dependent or unequal relationships (e.g. teacher/student, clinical therapist/service-user) may compromise the ability to give informed consent which is free from any form of pressure (real or implied) arising from this relationship. TREC recommends that, wherever practicable, investigators choose participants with whom they have no dependent relationship. Following due scrutiny, if the investigator is confident that the research involving participants in dependent relationships is vital and defensible, TREC will require additional information setting out the case and detailing how risks inherent in the dependent relationship will be managed. TREC will also need to be reassured that refusal to participate will not result in any discrimination or penalty.

6. Will the study involve participants who are vulnerable? YES X NO ☐

For the purposes of research, 'vulnerable' participants may be adults whose ability to protect their own interests are impaired or reduced in comparison to that of the broader population. Vulnerability may arise from the participant's personal characteristics (e.g. mental or physical impairment) or from their social environment, context and/or disadvantage (e.g. socio-economic mobility, educational attainment, resources, substance dependence, displacement or homelessness). Where prospective participants are at high risk of consenting under duress, or as a result of manipulation or coercion, they must also be considered as vulnerable.

Adults lacking mental capacity to consent to participate in research and children are automatically presumed to be vulnerable. Studies involving adults (over the age of 16) who lack mental capacity to consent in research must be submitted to a REC approved for that purpose. Please consult Health Research Authority (HRA) for guidance: https://www.hra.nhs.uk/

Some participants are children under the age of 11.

6.1. If YES, what special arrangements are in place to protect vulnerable participants' interests?

If **YES**, the research activity proposed will require a DBS check. *(NOTE: information concerning activities which require DBS checks can be found via https://www.gov.uk/government/publications/dbs-check-eligible-positions-guidance)*
DBS check of researcher already granted. Safeguarding protocols of school will be followed; all participants will be made aware of this prior to the research beginning. Please also see description of arrangements to protect participants outlined in question 13 of this form.

7. Do you propose to make any form of payment or incentive available to participants of the research? YES ☐ NO X

If **YES**, please provide details taking into account that any payment or incentive should be representative of reasonable remuneration for participation and may not be of a value that could be coercive or exerting undue influence on potential participants' decision to take part in the research. Wherever possible, remuneration in a monetary form should be avoided and substituted with vouchers, coupons or equivalent. Any payment made to research participants may have benefit or HMRC implications and participants should be alerted to this in the participant information sheet as they may wish to choose to decline payment.

NA

8. What special arrangements are in place for eliciting informed consent from participants who may not adequately understand verbal explanations or written information provided in English; where participants have special communication needs; where participants

have limited literacy; or where children are involved in the research? (Do not exceed 200 words)

Consent forms and information sheet will be presented in child appropriate language with visuals. Both the child and parent will be reminded they have the right to withdraw at any time including after the interview Participants will also be reminded their participation, or non-participation will not impact their current education or place at Forest School. Prior to testing and interviews I will meet up (via zoom) with all participants to read through the information sheet and the consent form and will answer any questions potential participants have. In the case of interviews the information sheet and consent form will be discussed via an initial telephone call before the interview itself.

SECTION F: RISK ASSESSMENT AND RISK MANAGEMENT

9. Does the proposed research involve any of the following? *(Tick as appropriate)*

☐ use of a questionnaire, self-completion survey or data-collection instrument (attach copy)
☐ use of emails or the internet as a means of data collection
X use of written or computerised tests
X interviews (attach interview questions)
☐ diaries (attach diary record form)
X participant observation (Of whole Forest School from fidelity check of Forest School only)
☐ participant observation (in a non-public place) without their knowledge / covert research
X audio-recording interviewees or events
☐ video-recording interviewees or events
☐ access to personal and/or sensitive data (i.e. student, patient, client or service-user data) without the participant's informed consent for use of these data for research purposes
☐ administration of any questions, tasks, investigations, procedures or stimuli which may be experienced by participants as physically or mentally painful, stressful or unpleasant during or after the research process
☐ performance of any acts which might diminish the self-esteem of participants or cause them to experience discomfiture, regret or any other adverse emotional or psychological reaction
☐ investigation of participants involved in illegal or illicit activities (e.g. use of illegal drugs)
☐ procedures that involve the deception of participants
☐ administration of any substance or agent
☐ use of non-treatment of placebo control conditions
☐ participation in a clinical trial
X research undertaken at an off-campus location
☐ research overseas (copy of VCG overseas travel approval attached)

10. Does the proposed research involve any specific or anticipated risks (e.g. physical, psychological, social, legal or economic) to participants that are greater than those encountered in everyday life? YES ☐ NO X
If **YES**, please describe below including details of precautionary measures.

11. Where the procedures involve potential hazards and/or discomfort or distress for participants, please state what previous experience the investigator or researcher(s) have had in conducting this type of research.
NA
12. Provide an explanation of any potential benefits to participants. Please ensure this is framed within the overall contribution of the proposed research to knowledge or practice. (Do not exceed 400 words) **NOTE:** Where the proposed research involves students of our University, they should be assured that accepting the offer to participate or choosing to decline will have no impact on their assessments or learning experience. Similarly, it should be made clear to participants who are patients, service-users and/or receiving any form of treatment or medication that they are not invited to participate in the belief that participation in the research will result in some relief or improvement in their condition.
Parents and children who have consented to participating in Forest School will gain a greater understanding of the benefits on learning and whether these triangulate with their own current beliefs and perceptions on the benefits of Forest School. Parents and children may not often get time to speak about their own experiences, particularly one as life changing as the COVID-19 pandemic and how they feel about their child's learning; this experience may help them feel valued, empowered and help them process their thoughts and feelings. At a wider level the research will help inform schools about whether they wish to buy in Forest School provision and cost effectiveness of this resource. Future research that may build on this may also help inform policy at a wider local authority or governmental level, improving services and education for children.
13. Provide an outline of any measures you have in place in the event of adverse or unexpected outcomes and the potential impact this may have on participants involved in the proposed research. (Do not exceed 300 words)
As the researcher proposes to assess young people in their education settings, a named contact that the child is familiar with such as the SENCO or class teacher will be identified. At the start of testing the participant will be made aware that the person is available for them to meet and discuss the process, if they become distressed at any point. If the child, during testing, or the interviewee during the interviews, become distressed the researcher will end the testing/interview immediately. In the case of the child this will be reported back to the child's key person in the education setting and where needed their parent. The researcher will also leave a contact email address with the education setting for contact if the participants distress continues, other support services will also be offered at this point. The researcher will check in with the identified adult a week after data collection to check in on how the participant is doing since testing. The young person will also continue to have access to this key adult in school.

14. Provide an outline of your debriefing, support and feedback protocol for participants involved in the proposed research. This should include, for example, where participants may feel the need to discuss thoughts or feelings brought about following their participation in the research. This may involve referral to an external support or counseling service, where participation in the research has caused specific issues for participants. Where medical aftercare may be necessary, this should include details of the treatment available to participants. Debriefing may involve the disclosure of further information on the aims of the research, the participant's performance and/or the results of the research. (Do not exceed 500 words)

The aims of the research will be disclosed before participants consent to the study.

Children and parents will be debriefed after the interview and will have the opportunity to ask the researcher any questions they may have.

All participants, including children, will be informed with regards to confidentiality and anonymity.

When data collection and analysis is complete schools and forest schools involved in the research will be contacted and offered a feedback session to receive an overview of the findings. Parents and children may also be invited to these sessions.

FOR RESEARCH UNDERTAKEN AWAY FROM THE TRUST OR OUTSIDE THE UK

15. Does any part of your research take place in premises outside the Trust?

X **YES,** and I have included evidence of permissions from the managers or others legally responsible for the premises. This permission also clearly states the extent to which the participating institution will indemnify the researchers against the consequences of any untoward event

16. Does the proposed research involve travel outside of the UK? NA

☐ **YES,** I have consulted the Foreign and Commonwealth Office website for guidance/travel advice? http://www.fco.gov.uk/en/travel-and-living-abroad/

☐ **YES,** I am a non-UK national and I have sought travel advice/guidance from the Foreign Office (or equivalent body) of my country of origin

☐ **YES,** I have completed the overseas travel approval process and enclosed a copy of the document with this application

For details on university study abroad policies, please contact academicquality@tavi-port.nhs.uk

IF YES:

17. Is the research covered by the Trust's insurance and indemnity provision?

X YES ☐ **NO**

18. Please evidence how compliance with all local research ethics and research governance requirements have been assessed for the country(ies) in which the research is taking place.

NOTE:

For students conducting research where the Trust is the sponsor, the Dean of the Department of Education and Training (DET) has overall responsibility for risk assessment regarding their health and safety. If you are proposing to undertake research outside the UK, please ensure that permission from the Dean has been granted before the research commences (please attach written confirmation)

SECTION G: PARTICIPANT CONSENT AND WITHDRAWAL

18. Have you attached a copy of your participant information sheet (this should be in *plain English*)? Where the research involves non-English speaking participants, please include translated materials. YES X NO ☐

If **NO**, please indicate what alternative arrangements are in place below:

19. Have you attached a copy of your participant consent form (this should be in *plain English*)? Where the research involves non-English speaking participants, please include translated materials.
YES X NO ☐ NA

If **NO**, please indicate what alternative arrangements are in place below:

20. The following is a participant information sheet checklist covering the various points that should be included in this document.

X Clear identification of the Trust as the sponsor for the research, the project title, the Researcher or Principal Investigator and other researchers along with relevant contact details.
X Details of what involvement in the proposed research will require (e.g., participation in interviews, completion of questionnaire, audio/video-recording of events), estimated time commitment and any risks involved.
X A statement confirming that the research has received formal approval from TREC.
☐ If the sample size is small, advice to participants that this may have implications for confidentiality / anonymity.
☐ A clear statement that where participants are in a dependent relationship with any of the researchers that participation in the research will have no impact on assessment / treatment / service-use or support.
X Assurance that involvement in the project is voluntary and that participants are free to withdraw consent at any time, and to withdraw any unprocessed data previously supplied.
X Advice as to arrangements to be made to protect confidentiality of data, including that confidentiality of information provided is subject to legal limitations.
X A statement that the data generated in the course of the research will be retained in accordance with the University's Data Protection Policy.
XAdvice that if participants have any concerns about the conduct of the investigator, researcher(s) or any other aspect of this research project, they should contact Simon Carrington, Head of Academic Governance and Quality Assurance (academicquality@tavi-port.nhs.uk)
X Confirmation on any limitations in confidentiality where disclosure of imminent harm to self and/or others may occur.

21. The following is a <u>consent form</u> checklist covering the various points that should be included in this document.

X Trust letterhead or logo.
X Title of the project (with research degree projects this need not necessarily be the title of the thesis) and names of investigators.
X Confirmation that the project is research.
X Confirmation that involvement in the project is voluntary and that participants are free to withdraw at any time, or to withdraw any unprocessed data previously supplied.
X Confirmation of particular requirements of participants, including for example whether interviews are to be audio-/video-recorded, whether anonymised quotes will be used in publications advice of legal limitations to data confidentiality. (*Within information sheet)*
☐ If the sample size is small, confirmation that this may have implications for anonymity any other relevant information.
X The proposed method of publication or dissemination of the research findings.(*Within information sheet)*
☐ Details of any external contractors or partner institutions involved in the research.
☐ Details of any funding bodies or research councils supporting the research.
☐ Confirmation on any limitations in confidentiality where disclosure of imminent harm to self and/or others may occur. (*Within information sheet)*

SECTION H: CONFIDENTIALITY AND ANONYMITY

22. Below is a checklist covering key points relating to the confidentiality and anonymity of participants. Please indicate where relevant to the proposed research.

☐ Participants will be completely anonymised and their identity will not be known by the investigator or researcher(s) (i.e. the participants are part of an anonymous randomised sample and return responses with no form of personal identification)?
☐ The responses are anonymised or are an anonymised sample (i.e. a permanent process of coding has been carried out whereby direct and indirect identifiers have been removed from data and replaced by a code, with <u>no</u> record retained of how the code relates to the identifiers).
X The samples and data are de-identified (i.e. direct and indirect identifiers have been removed and replaced by a code. The investigator or researchers <u>are</u> able to link the code to the original identifiers and isolate the participant to whom the sample or data relates).
☐ Participants have the option of being identified in a publication that will arise from the research.
X Participants will be pseudo-anonymised in a publication that will arise from the research. (I.e. the researcher will endeavour to remove or alter details that would identify the participant.)
☐ The proposed research will make use of personal sensitive data.
☐ Participants consent to be identified in the study and subsequent dissemination of research findings and/or publication.

23. Participants must be made aware that the confidentiality of the information they provide is subject to legal limitations in data confidentiality (i.e. the data may be subject to a subpoena, a freedom of information request or mandated reporting by some professions). This only applies to named or de-identified data. If your participants are named or de-identified, please confirm that you will specifically state these limitations.

YES X NO ☐

If **NO**, please indicate why this is the case below:

NOTE: WHERE THE PROPOSED RESEARCH INVOLVES A SMALL SAMPLE OR FOCUS GROUP, PARTICIPANTS SHOULD BE ADVISED THAT THERE WILL BE DISTINCT LIMITATIONS IN THE LEVEL OF ANONYMITY THEY CAN BE AFFORDED.

SECTION I: DATA ACCESS, SECURITY AND MANAGEMENT

24. Will the Researcher/Principal Investigator be responsible for the security of all data collected in connection with the proposed research? YES X NO ☐
If **NO**, please indicate what alternative arrangements are in place below:

25. In line with the 5th principle of the Data Protection Act (1998), which states that personal data shall not be kept for longer than is necessary for that purpose or those purposes for which it was collected; please state how long data will be retained for.

☐ 1-2 years ☐ 3-5 years X 6-10 years ☐ 10> years

NOTE: Research Councils UK (RCUK) guidance currently states that data should normally be preserved and accessible for 10 years, but for projects of clinical or major social, environmental or heritage importance, for 20 years or longer. (http://www.rcuk.ac.uk/documents/reviews/grc/grcpoldraft.pdf)

26. Below is a checklist which relates to the management, storage and secure destruction of data for the purposes of the proposed research. Please indicate where relevant to your proposed arrangements.

X Research data, codes and all identifying information to be kept in separate locked filing cabinets.
X Access to computer files to be available to research team by password only.
☐ Access to computer files to be available to individuals outside the research team by password only (See **23.1**).
X Research data will be encrypted and transferred electronically within the European Economic Area (EEA).
X Research data will be encrypted and transferred electronically outside of the European Economic Area (EEA). (See **28**).
NOTE: Transfer of research data via third party commercial file sharing services, such as Google Docs and YouSendIt are not necessarily secure or permanent. These systems may also be located overseas and not covered by UK law. If the system is located outside the European Economic Area (EEA) or territories deemed to have sufficient standards of data protection, transfer may also breach the Data Protection Act (1998).
☐ Use of personal addresses, postcodes, faxes, e-mails or telephone numbers.
X Use of personal data in the form of audio or video recordings.
☐ Primary data gathered on encrypted mobile devices (i.e. laptops). **NOTE:** This should be transferred to secure UEL servers at the first opportunity.
X All electronic data will undergo secure disposal.
NOTE: For hard drives and magnetic storage devices (HDD or SSD), deleting files does not permanently erase the data on most systems, but only deletes the reference to the file. Files can be restored when deleted in this way. Research files must be overwritten to ensure they are completely irretrievable. Software is available for the secure erasing of files from hard drives which meet recognised standards to securely scramble sensitive data. Examples of this software are BC Wipe, Wipe File, DeleteOnClick and Eraser for Windows platforms. Mac users can use the standard 'secure empty trash' option; an alternative is Permanent eraser software.
X All hardcopy data will undergo secure disposal.
NOTE: For shredding research data stored in hardcopy (i.e. paper), adopting DIN 3 ensures files are cut into 2mm strips or confetti like cross-cut particles of 4x40mm. The UK government requires a minimum standard of DIN 4 for its material, which ensures cross cut particles of at least 2x15mm.

27. Please provide details of individuals outside the research team who will be given password protected access to encrypted data for the proposed research.

None. The data will only be accessible to myself as the principal researcher.

28. Please provide details on the regions and territories where research data will be electronically transferred that are external to the European Economic Area (EEA).

If a transcription company is sought for the interviews this may involve data electronically transferred external to the EEA. Where possible a company that keeps data within the EEA will be sought.

29. Will this research be financially supported by the United States Department of Health and Human Services or any of its divisions, agencies or programs? YES ☐ NO X

If **YES** please provide details:

SECTION J: PUBLICATION AND DISSEMINATION OF RESEARCH FINDINGS

30. How will the results of the research be reported and disseminated? *(Select all that apply)*

X Peer reviewed journal
☐ Non-peer reviewed journal
☐ Peer reviewed books
X Publication in media, social media or website (including Podcasts and online videos)
X Conference presentation
☐ Internal report
☐ Promotional report and materials
☐ Reports compiled for or on behalf of external organisations X Dissertation/Thesis
☐ Other publication
X Written feedback to research participants
X Presentation to participants or relevant community groups
☐ Other (Please specify below)

SECTION K: OTHER ETHICAL ISSUES

31. Are there any other ethical issues that have not been addressed which you would wish to bring to the attention of Tavistock Research Ethics Committee (TREC)?

I have not previously worked for, nor have any connection with a Forest School or the Forest School association.

SECTION L: CHECKLIST FOR ATTACHED DOCUMENTS

32. Please check that the following documents are attached to your application.

☐ Letters of approval from any external ethical approval bodies (where relevant)
X Recruitment advertisement
X Participant information sheets (including easy-read where relevant)
X Consent forms (including easy-read where relevant)
X Assent form for children (where relevant)
X Evidence of any external approvals needed
☐ Questionnaire
X Interview Schedule or topic guide
☐ Risk Assessment (where applicable)
☐ Overseas travel approval (where applicable)

34. Where it is not possible to attach the above materials, please provide an explanation below.

Interview questions will be created upon further consultation with Forest School practitioners regarding topics covered in Forest School, and upon further analysis of the current evidence base. At present only a topic guide/ideas on possible interview questions has been included.

Appendix J – Examples of coded extracts from thematic analysis: Parent

These are example extracts to help understanding of each overarching theme and theme for the parent dataset. The Participant number that corresponds to each quote is in brackets.

Overarching Theme 1: Forest School benefits children's learning and development

Theme	Code or subtheme	Interview Extract
Develops confidence, and knowledge of the natural world	Confidence in the woods	"He knows all the little areas as well. He can walk you all the way there" (Adult 5) "You know he's really confident in taking me around those woods now and in the way, telling us where to go and what we are going to end up. I don't know if some of those mapping skills and things like that are included, I'm not sure. I guess he is a lot more confident in taking lead you know" (Adult 5) "It really is fascinating to watch children, they quite quickly have got, when they are in that space. They can just be themselves." (Adult 1) "He feels more at home when we go to the woods or when we are out, he is very comfortable and at home with that and doesn't. Embraces it and doesn't worry about whether he is hot or cold." (Adult 1) "I went to pick her up after school and went into the woods, near where they are, which they often go to and she was like this is my territory now and she was showing me around. To have that, it's quite empowering, to have that this is my area, I know this

		really well, and she could see that I was really impressed. She was like welcome to my world mum." (Adult 2)
	Connects child to nature/place	"I definitely think that Forest School has helped him have more of a connection with nature and feel more at home when we go to the woods" (Adult 1) "You know having a connection with nature on whatever scale that is." (Adult 1) "I just want all the children to get something from it and just enjoy it in some way or just feel like they belong there. I think to feel like they belong in the woods they need to have some kind of attachment to something rather than just enjoying it". (Adult 1)
	Chance to learn about the world	"For them to be able to learn about the world around them and I think they learn more when they are outside doing rather than talking about something" (Adult 3) "For example in forest school they will have a viewing pot where you can view bugs" (Adult 3) "Some of them have the opportunity for that structured language, structured conversations about what they see what they observe in terms of the world around them" (Adult 3)

		"You know he has a really lovely vocabulary and he wouldn't think of anything of trying to describe what is around him and vocabulary and plants and what they are he has sort of developed that so I know that's a big part of it." (Adult 5) "Now if they fall on the floor he is well aware that he doesn't pick things as well so he came home and we sat for ages trying to find out what it was called and what it might be." (Adult 5) "You know the forestry type things you know knowing what they can and can't eat, I always thought was quite good" (Adult 5) "You know because I've seen kids pick a mushroom up and go to eat it and actually some of those are quite dangerous whereas you know he will is that one poisonous is the word he used. Is that a poisonous mushroom?" (Adult 5) "They go out looking for creatures and things and bug pots" (Adult 2) "They do lots of seasonal stuff which I really like, shes really aware of the, just telling me about the seasons. I don't know other kids that speak about the frost and the dunno the fact that its autumn when shes only 3 years old, when she sees leaves that have turned colour and that sort of thing." (Adult 2) "Shes got some crazy vocabulary already. (Can you give me an example) She knows about nocturnal animals, nocturnal" (Adult 2)

		"She had me walking on the balance log and holding my hand being like the teacher and then she showed me this thing and I was like whats that and she was like it's a jelly ear and I was like whats a jelly ear and I thought she had made it up. Because she does make up, you know she is very imaginative, she was like theres loads more over here, and we went over to this tree stump and there was loads of these mushroom things and I was like woh that's amazing." (Adult 2) "Yeh, yeh, yeh she was very keen to look for bugs and creatures and identify them and know she just knows about looking after the plants and watering them and knows they grow from seeds."(Adult 2) "Yep.. I think that just being in a natural setting is really important.. it teaches them about something other than themselves, their part of something bigger" (Adult 2) "I think that they do actually start to think about what youre saying and think about, you know we have a few young trees and some of them give them a good shake" (Adult 1)
Developed their positive risk taking	Builds confidence in navigating fire	"Yeh so they would build a little fire and do the whole toast marshmallow thing and hot chocolate" (Adult 4) "I remember him panicking a little bit because he doesn't like hot chocolate or marshmallows but I remember them teaching them actually how to do the firelighting and he I light candles indoors and he knows not to touch them." (Adult 5) "He can confidently light a candle himself, with supervision obviously. He is quite confident doing those types of activities

		whereas my older child was never like that and didn't have any forestry school experience. So again I think the difference between them is quite .. he has got the confidence to do those types of activities" (Adult 5) "The fires the I think they did a little bit of cooking they just started to get more interested in cooking." (Adult 5)
	Helped my child be physically brave	"She definitely got physically braver through forest school with the whole climbing trees and stuff because she can be quite timid and shy with a lot of the 'ehh Im not going to do that'. Whereas in forest school she would be encouraged so having that experience probably made her then attempt things or give things a go more frightening physically" (Adult 4) Can bring children on so much more than you can do in a classroom and physical risks. (Adult 1) "They've got a little button swing on a rope and had apparently she has only just started to get the hang of that. And the teacher said in her school report because they get a little school report, she was impressed that she had" (Adult 2) "Before she was like I cant do this so I'm not going to try and now she was like I'll try again and she even fell off and tried again and then she finally got the hang of it. So I'm hoping that

		will give her more confidence to keep persevering, because she does, I don't know if that's a Forest School thing." (Adult 2)
	Helped my child have a go	"So the risks that they can take and the rewards come from taking risks and facing your fears and sometimes realising that you can do something than you couldn't do" "Can bring children on so much more than you can do in a classroom and physical risks . There's a lot more opportunity for emotional risks to be taken but you can have lots of emotional risks in the classroom. With Forest School just being in those surroundings and having the time to work through those emotional risks as well" (Adult 1) "I mean yeh he doesn't mind getting things wrong, he'll have a go at writing or drawing, he'll always have a go at things, I mean he's not scared to have a go" (Adult 1)
	Rules keep children safe at Forest School	"she'll be the one to say don't forget forest school rules. Walking round the fire and things like that" (Adult 4) "But they teach them this is the right way to use them, and this is what we don't do." (Adult 5) "You know because of the dangers that can be associated with some of the activities they do in forest school. I was saying you've really got to listen; you know make sure you take note of whoever tells you what you need to do. You need to pay

		attention. Maybe help him a little bit more with his surroundings you know be aware of the dangers more." (Adult 5) "If you teach them well and explain really clearly what they need to do and I think its very repetitive as well, especially if they are doing anything with fire work." (Adult 5) "They all have little stools or logs to sit on, and they're not allowed off their log. It's very much they stay on there unless they are directed to move." (Adult 5)
	Skilled in using tools (that involve risk)	"They would do little wood necklaces and do wood chiseling" (Adult 4) "We didn't have any sticks or marshmallows and they kind of whittled down knives from sticks which they learnt to do in forest school." (Adult 4) "Whittling with knives and bits like that" (Adult 5) "You know it's the same as what we promote in scouting, you know yes we give them axes but we teach them this is the right way to use them, and this is what we don't do." (Adult 5) "He is quite confident with things like that in using tools and things." (Adult 5) "I can't remember what they were making but they made something over a period of a couple of weeks and they remember using tools and all sorts to make it I think from what I can gather." (Adult 5)

Developed their social skills	Builds prosocial skills	"Use their emotional intelligence to look at each other and know whether everyone is having a good time and alright with the game they are playing" (Adult 1) "Her social skills, she's very caring, the teacher has said that, she'll often take the new kids under her wing and show them around. I don't know how specific that is to Forest School." (Adult 2) "The social stuff is really important they have a lot of fun and a lot of respect for each other. Recently there's another girl who has been there the same time as F and she is always saying how strong she is. She is so strong, she managed to get her lid off her lunchbox once. When she was first finding her own… she would always be like I'm the fastest and I'm the best... maybe all kids go through that. She always wanted to be the top dog but now she's ok, but maybe that's a maturity thing, they see each other." (Adult 2) "Yeh they build things together and build little dens and stuff and its nice because now she's sort of appreciating other people's skills and things, I didn't expect that from them so young and stuff. And celebrating that as well which is really nice, knowing they're good at that, telling me about them. You know they were really good at this today" (Adult 2)
	Learning how to interact with the community	"I mean they go out into the park and so they go on their adventures and they see people coming and going all the time and the teacher and the team encourage them to ..I don't know about safeguarding and stuff but they're at least not isolated from them." (Adult 2)

		"And sometimes they've had to..you know they see dog walkers…and they've learned how to…you know don't approach a dog…they will sometimes talk to other people." (Adult 2)
	Learn how to work in a team	"Probably yeh the socialisation and working in a little team and working in different groups, I would say that was a big factor" (Adult 4) "I think they just learn from each other, and the mix of ages as well. In a forest school you wouldn't have year groups as such. So I think learning from people older than you as children, observing them, being with them can really help with teamwork." (Adult 1) "Less intervention or the right kind of intervention helps with the teamwork." (Adult 1) "They do a lot of helping each other, carrying things ." (Adult 2) "Yeh they build things together and build little dens and stuff and its nice because now she's sort of appreciating other people's skills and things, I didn't expect that from them so young and stuff. And celebrating that as well which is really nice, knowing they're good at that, telling me about them. You know they were really good at this today." (Adult 2)
	Learn to accept others/build inclusive mindset	"I think because the groups were muddled up and they weren't always with their closest friends it kind of forced them into a

		situation where they would have to talk to children they wouldn't normally talk to." (Adult 4) "Not necessarily the group he would have played with in the playground, all abilities . A real mixture of I quite like it's very inclusive do you know because it doesn't matter what is going on they can all access that one way or the other." (Adult 5) "Use their emotional intelligence to look at each other and know whether everyone is having a good time and alright with the game they are playing." (Adult 1) "I think they just learn from each other, and the mix of ages as well. In a forest school you wouldn't have year groups as such. So I think learning from people older than you as children, observing them, being with them can really help with teamwork" (Adult 1) "The social stuff is really important they have a lot of fun and a lot of respect for each other. Recently there's another girl who has been there the same time as my child and she is always saying how strong she is. She is so strong, she managed to get her lid off her lunchbox once. When she was first finding her own… she would always be like I'm the fastest and I'm the best.. maybe all kids go through that. She always wanted to be the top dog but now she's ok.. but maybe that's a maturity thing, they see each other." (Adult 2) "I mean they go out into the park and so they go on their adventures and they see people coming and going all the time and the teacher and the team encourage them to ..I don't know

		about safeguarding and stuff but they're at least not isolated from them." (Adult 2) "It's a nice diverse group at the school, its mixed, they're not just all white kids." (Adult 2) "You know exposure to other people that don't look like her. Well you know daddy and grandma look different anyway. She doesn't have a concept of race yet which is interesting. But I think I'm sure this is reinforcing just the fact that there are many different people and they're all doing the same things together at least. She's seeing how strong the other girl is. Hopefully it's not like..setting up this hierarchy." (Adult 2)
	Builds confidence in social situations	"They encourage all the children to speak as well, there was an element from what I can gather that ..I've not observed it so I don't really know but there was an element of circle time each week where they might share something ,or develop their expressive skills." (Adult 5) "I don't know I've had a few that have been a bit too worried about what everybody thinks and don't want to talk because they might make themselves look stupid or whatever. And they've really, they're not like that anymore, you know it really transforms, transformations do happen." (Adult 1) "I think because the groups were muddled up and they weren't always with their closest friends it kind of forced them into a

		situation where they would have to talk to children they wouldn't normally talk to." (Adult 4) "So you know just going round and showing your action and saying your forest school name and knowing that everyone has seen you can be confident because you know there's such a spectrum of shyness to confidence isn't there. For the most shy children that might be a really big thing you know saying their forest school name. So we do if you want to do your forest school name then tell me how you feel today. Then they might do something silly or say I feel happy or whatever." (Adult 1) "Maybe underprivileged people or kids that are disempowered in some way. Just lacking confidence in themselves and the world." (Adult 2)
Forest School setting brings more benefits to child than classroom environment	Child's learning better in the natural environment	"I think the children are more engaged outside of the home, we want to get them out in the fresh air and burn off some steam/energy but also engage with nature; I think it's important." (Adult 3) "For them to be able to learn about the world around them and I think they learn more when they are outside doing rather than talking about something. And all of the other bits about the wind in your face those feelings of hot cold, feelings in their tummy when their running fast downhill, things like that." (Adult 3) "There's lots of activities , same in the garden and you run with whatever the children want to talk about or what they've found, discovered, whereas indoor learning still is child led all though you still go along with them its very different to them finding a

		bug along the floor and you know the excitement that they find in that. Than something indoors I suppose?" (Adult 3) "because we went all year round we would talk about squishy mud there was lots of opportunities to talk about" (Adult 3) "I do personally because they do get a lot out of it because they get chance to do things they wouldn't get to do in the classroom or the opportunities aren't available in the classroom or in the school playground environment. Depends on what it is some of them have the opportunity to be out and about." (Adult 3) "There's just not those experiences I don't know bringing in a worm or wormery into a classroom into that kind of stagnant environment to seeing them outside in the natural environment and seeing them wriggling through the mud and the types of things they will see. Or having a I don't know a tank with fish in or a tank with frog spawn in, I think its completely different to looking at them out in a natural stream or forest to see." (Adult 3) "And there's all conversations about how the water level drops over the summer to now. I think there's a completely different conversation had about that and you know the understanding in the real world rather than trying to bring that into the classroom." (Adult 3) "Therefore if they prefer to be out their levels of anxiety or arousal will be less than if they're somewhere outside. And their ability to run I think the ability to move." (Adult 3)

		"The thing about being outside is you don't sit still on the floor do you. In a forest school your active you're moving your engaged with the things you are doing which is different to in a classroom isn't where especially as they get older they are sitting in their seat. You wouldn't do anything like that in Forest School would you." (Adult 3) "She likes change, I mean that's probably also her age, she couldn't sit for too long, doing one thing, we have to do different things. But she can definitely keep going she's got capacity for knowledge she loves anything new, she's like what's that." (Adult 2) "The creativity that maybe you couldn't get in an outdoor classroom in the school setting isn't going to have so much natural opportunities." (Adult 4) "Some more so than others, those that maybe struggle being in the classroom a little bit more . Im thinking of your adhd ones maybe , children that need to maybe let go a little bit more , you know doing outdoor sports more often would support them . To be outdoors in general would help" (Adult 5) "And then just being able to imaginative play you know kids are so good at that. It's a natural thing that we then lose because we're not exposed to being inspired by nature." (Adult 2)
	Space (physical, psychological) gives child a sense of freedom	"She would tie red flags around the trees and she couldn't go beyond them . They knew the boundaries, so they could then run wild but they knew, so when they were little the adult would hover round those edges" (Adult 4)

		"Well I think the wide open space ness if you go into a large area and the freedom they get to run around" (Adult 4) "I think it's more beneficial to children that may be haven't had the opportunity to experience that outside of school? Maybe from parents that would take them somewhere like that or they don't live somewhere like that. It might be there only chance to have that level of freedom." (Adult 4) "I think when they see me being silly, they think well hmmm if she's, if that grown up is being silly maybe that's ok . I don't know Ive had a few that have been a bit too worried about what everybody thinks and don't want to talk because they might make themselves look stupid or whatever. And they've really, their not like that anymore, you know it really transforms, transformations do happen. It really is fascinating to watch children, they quite quickly have got, when they are in that space. They can just be themselves." (Adult 1) "Especially when , you know the grown-ups, you don't have to do anything, when you stand in the woods, kids will just naturally play and learn themselves so there's nothing bad about taking a group of children into the woods." (Adult 1) "The fact that they haven't got someone interfering all the time" (Adult 1) "You know by not interfering and standing back, given time they will work things out themselves." (Adult 1)

		"You feel you can get by in the wild a little bit more it does teach you more about your own capability. I think you have a lot more freedom in than you do in a classroom setting, they're able..that might depend on the particular outdoor setting they have but on the other side of the area which is quite far.. independence from adults." (Adult 2)
	Parent spoke positively about activities in environment (variety, stimulating, engaging)	"We'll make it as rich as possible in terms of the things they can do. There is logs for them to walk along, as I said we have the tyre swing. We have a mud kitchen, a hammock that hasn't been put up yet, we need to put that up, a digging area, a bug hotel, but we haven't quite sorted that out yet." (Adult 1) "Then they've also got all the rope swings and they set up tyres and really cool stuff like balance logs" (Adult 2) "So the teacher would the lady running it would take equipment with her obviously, like a rope swing, a tight rope walking thing, loads of tools and buckets so yeh really good." (Adult 4)
	Less academic pressure	"It was very different I think personally … you know he suffered a lot with anxiety at school. If he had something like this where he was going into school knowing he didn't have to go into a classroom and learn he was actually outside to do something really fun and still learn. I think it would have helped him a little bit more." (Adult 5) "I honestly think going forward there's so much emphasis on academic work and levels and progress and actually they make just as much steps by doing some of these lovely activities and learning some of these real life skills. I think every school should have somebody trained because I don't think it would be

		a big ask for someone in the long run they should all have equipment to do some of that as well." (Adult 5) "Maybe its senior schools where it feels more academic and primary schools are all right at the moment. I know there's a lot more pressure in that way to maybe not focus on where the child is at whereas in primary school it's a bit easier to adapt It or make it more play based." (Adult 1) "There's just so much more time in Forest School whereas in the classroom teachers have so many boxes they need to tick and so much going on there's not the time to give to the children." (Adult 1) "I really believe that children learn best through play and so I do just think that any playing and being outside, you just cant go wrong with" (Adult 1)
	Being outside helped their physical health/exercise	"Some more so than others, those that maybe struggle being in the classroom a little bit more. I'm thinking of your adhd ones maybe , children that need to maybe let go a little bit more , you know doing outdoor sports more often would support them . To be outdoors in general would help." (Adult 5) "There is quite a lot to the sessions, I mean they used to be all afternoon and he used to come home and sleep afterwards." (Adult 5) "And she's not been ill at all like she's not been very ill at all, she seems quite resilient in that way, health wise and yeh." (Adult 2)

My child was engaged and wanted to participate	Develops listening/sustains attention	"You know because of the dangers that can be associated with some of the activities they do in forest school. I was saying you've really got to listen; you know make sure you take note of whoever tells you what you need to do. You need to pay attention. Maybe help him a little bit more with his surroundings you know be aware of the dangers more." (Adult 5) "Because of the dangers associated with it you really have to listen." (Adult 5) "No I think it definitely developed his listening and that came through in his reports from reception to year one or year two." (Adult 5) "He didn't want to be tucked away doing an activity he didn't want to do. He wanted to be in the garden all day, you know year 1 it came very formal and actually listening skills had to be a big part of that and so listening skills are quite good for them." (Adult 5) "I do think they would learn better and they would be more sustained in an activity that is outside and child led." (Adult 3) "Listening to instructions listening to activities so he needed to follow those instructions quite carefully." (Adult 5)
	Enjoyed it/engaged in it	"They always look forward to it every week, is it a Mummy day today because they would go with me and they would ask is it Forest School. And after going it would be something that was a

		clear enjoyment in their week . If they didn't go they would be disappointed with not going" (Adult 3) "I don't think there are academic skills needed as such you can still find enjoyment out of the natural world and learn from it regardless of your levels of learning." (Adult 3) "Yeh I think so my I think my eldest son would have loved it" (Adult 5) "Didn't have to go into a classroom and learn he was actually outside to do something really fun and still learn" (Adult 5) "But he really enjoyed it that. He used to ask everyday is it forest school today? Is it today?" (Adult 5) "Always come home buzzing, and said how much fun he had had and what he had done yeh really really good." (Adult 5) "He really enjoyed the social element of it as well you know he liked the children he was in a group with and I don't know if that was done purposively I'm not sure" (Adult 5) "That kind of sense of achievement that I've made something he loved to come home really buzzing from it." (Adult 5) "She was a bit clingy to start with but then she just loved it" (Adult 2)

Builds skills to overcome challenging situations	Develops perseverance	"Determination was one and you know get him to have a bit of grit as well. You know I think that is what he has when he is in the woods. Determination to be able to acclimatise in a tree. Having a love and connection with nature has just really helped." (Adult 1) "Its frustrating if something doesn't go very well, although her teacher said she is getting better at persevering" (Adult 2) "Before she was like I can't do this so I'm not going to try and now she was like I'll try again and she even fell off and tried again and then she finally got the hang of it. So I'm hoping that will give her more confidence to keep persevering, because she does, I don't know if that's a Forest School thing" (Adult 2) "I mean there was a video of her doing it and the teacher was saying that's it and she fell off and she was able to get back up again." (Adult 2)

	Develops resilience	“But I think it’s probably that (Forest School) and the mindfulness at home and all the other stuff we do at home, I think it’s a collection of stuff that gives him the tools to be able to manage his feelings and emotions and stuff like that.” (Adult 1 “I definitely think that if you have a child that doesn’t do mindfulness at school and didn’t get that at home then if you have a child that does do forest school then that would be really beneficial.” (Adult 1) “To help you deal with tricky situations better, forest school is really really good tool for that.”(Adult 1) “That can help us as well, especially now, to understand that and to understand the change and be resilient as nature is.” (Adult 1)
	Encourages them to be independent/autonomous thinkers	“Getting them to think about it and giving them a chance to think about it, not just DO YOU THINK THAT’S A GOOD IDEA!?! How do they tend to react? What do the children tend to say when you say stuff like that? I think that they do actually start to think about what you’re saying and think about, you know we have a few young trees and some of them give them a good shake” (Adult 1) “They do like to let them be more autonomous and choose what they’re going to do and how they’re going to do it. Apart form they always do a crafty thing together and do story time together and lunchtime together and they’ll usually go off on a walk everyday. So what I could gather from the report and the button swing it was her own choice to do the activity.” (Adult 2)

		“There’s a lot more challenge, there’s more going on, you have to look after yourself a bit more, they have to say when they’re cold, they have to say when they’re warm. All these things about learning about their own bodies in nature and they’re own comfort and discomfort, their own emotional wellbeing which comes from their own comfort or discomfort.” (Adult 2)
	Helps build confidence in themselves	“Yeh she’s definitely a fighter, we’re having to tone that down because she, it’s funny she’s very confident, I think she’s always been quite confident, and I do feel like the Forest School has helped with that”. (Adult 2) “My overall feeling is it is empowering to individual kids, empowering in giving themselves confidence in their own ability once they feel that they are more likely to interact” (Adult 2) “I think it’s important socially, but I think it stems from them being more confident in themselves. And what they can do and what they’re bodies can do. Helping them inhabit themselves.” (Adult 2) “If he had something like this where he was going into school knowing he didn’t have to go into a classroom and learn he was actually outside to do something really fun and still learn. I think it would have helped him a little bit more and do his confidence in those activities” (Adult 1)

Appendix J – Examples of coded extracts from thematic analysis: Child

These are example extracts to help understanding of each overarching theme and theme for the child dataset. The Participant number that corresponds to each quote is in brackets.

Overarching theme: I learn in Forest School.

Theme	Code	Interview Extract
A chance to learn about and be in nature	I get to see and learn about animals	"We were trying to dig for bugs this time. We were just trying to put them in the pot and see how many we could find….we just found worms." (Child 1) "Sometimes we had bug hunts I love bug hunts" (Child 2) "They've got a frog pond, FROG POND FROG POND(very excited) I watch them ribbet" (Child 2) Child 2: "When I went in April the animals weren't there (sad)" (Parent: "when she went in April the animals weren't there anymore because sometimes they were there and sometimes they weren't")
	I love the mud at Forest School	"Mud slides, we would have a mud slide in proper wet suits if we could get muddy .. And there was this slide that went round like a slope , they would get loads of mud up from

		the river and then we had to slide down it .” (Child 4) Interviewer :”How did you find getting messy?” Child 4: “Good, always been good” Interviewer: Why did you like that bit? Child 4: “because you got very muddy. Mrs X said mud keeps insects away so we used to get mud from like the river and we would like put it all over our face, like face paint. All of the getting muddy was fun”.
	I love the sounds of the Forest	Interviewer: ”Did you play in forest school?” Child 5: “All different activities, it was fun. Because I can pick up a leave and it go’s makes breaking twig noise. When you fold leaves over and it crunches. Ahh”
Forest School teaches you social expectations		“You have to wait your turn by queuing”. (Child 1) “You count how long someone has been on there(the swing)” (child 1)
Learn to navigate risk	Managing risk with adult support	Interviewer: “What are the adults like at forest school? “ Child 1:”They’re good They help us out.. we need a grown up to be able to go on the tyre

		swing.(Interviewer: Oh to keep you safe) Yes If we were going to use the drill."
	Risky activities are fun	"Well in Forest School we would also have a hammock on one of the trees and the other tree we would have a rope on it and we would do flips on it and walk along it , that was fun. (Interviewer: What was that like doing flips?) Good that was fun." (Child 4)
	Managing risk with rules	"We would put flags on the trees so we are not allowed to go past them trees so they can see us." (Child 4) "How to like climb trees and like because we would each have a bucket that you would turn over and put around the fire , but we're not allowed to go inside the buckets, we have to walk outside them." (Child 4) "When I climbed in the trees it helped me , when we go camping I learned we have to walk around the fire." (Child 4)
We can be creative in Forest School	Build things from nature	"I remember we coloured pieces of wood, like to draw on. There were pieces of wood you could draw on." (Child 5) "Then we would make weapons out of clay.

		(Interviewer:Where would you get the clay from?)There's this river that has the clay in there, buried in there. (Interviewer:What did you do with the weapons when you made them?) We would try and dig for stuff in the rivers in the dirt." (Child 5) "Building dens…they would go all the way round because we would find a tree and they would have lots of bits sticking out because we would make it go all the way round like a tipi." (Child 4) "We build dens at a lot of the forest school" (Child 1)

Appendix K- Examples of how transcripts coded (Child)

Child 1

Can you tell me about forest school?

Its good, I like the digging area, its got the tyre sing that a lot of people play with.
You have to wait your turn, by queuing.

How do you know how long someone has been on there?
You count how long someone has been on there

When do you do digging?
Ive done it today at forest school. We were trying to dig for bugs this time. We were just trying to put them in the pot and see how many we could find .

Which ones did you find?

We just found worms

How long have you been going to forest school?
2 years

What did you do when you first started forest school?
We used build dens at a lot of the forest schools

Did you most enjoy building it or using it?
Building it

Did you do that with other people or on your own?
With other people , names some other boys …

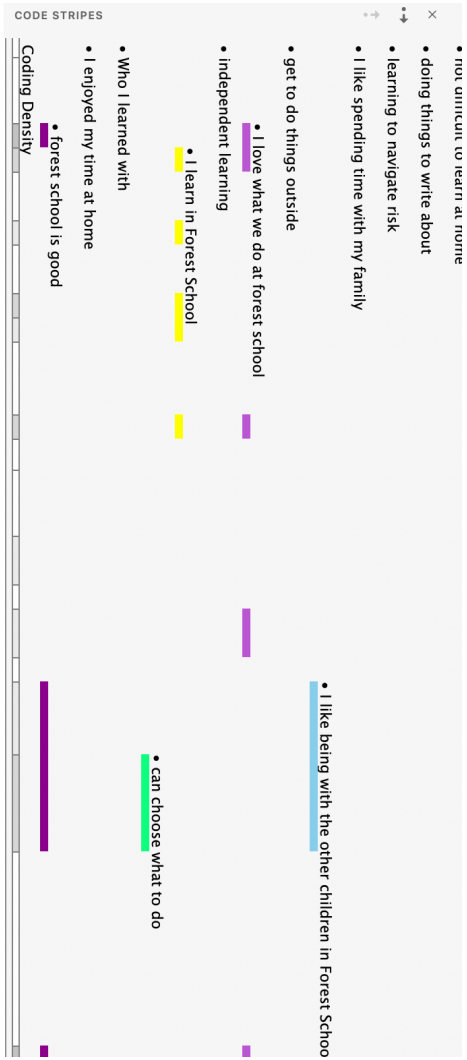
We just were doing what we wanted to help out with

(did adults tell you what to do or did you have to work it out?)
we had to work it out , it was easy

Have you built any dens at home?
No .
I built one in the front garden once but it wasn't big enough for me though

When do you normally do forest school?
We do it every Friday

How do you feel before forest school?



If I was to work with someone else would you say they should do forest school or they shouldn't ?
They should do it (why)
Because its fun

When the schools were closed did you go to forest school?
That was closed as well.. it was kind of fun because I got to see mummy and daddy and my sister a bit more. We went for loads of bike rides in the night time. We made a giant pirate ship out of a cardboard box

Did you have to do any homework at home?

Is there anything you don't like about forest school?
No not really, no

Are there anythings you do on your own ?
I make clay and (did that in home learning too)

Did you do any of your own activities when you were home learning or was your mum always helping?
A lot of it was on my own and some of them I done with mummy.

Do you have any of them with you or around the house to show me?
Treasure map, just came up with the idea and I made this (that was at Easter time).

Was that something you had to did do in forest school?
Did at easter ….(shows me writing)

Did you enjoy it when you were doing those things?
Yeh

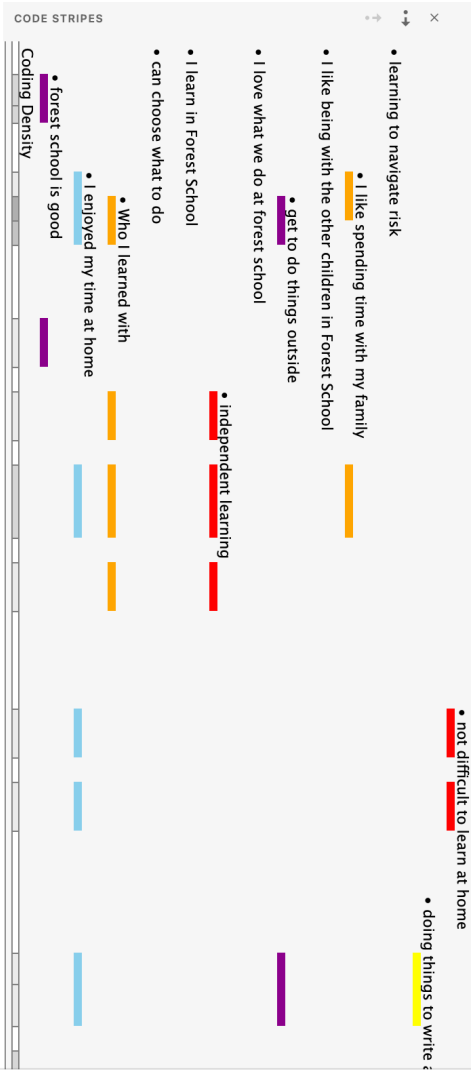
Did you ever find it hard to concentrate when you were at home? Was it hard to do the work?
No didn't find it too hard

Was there anything that helped you do the work at home?

Mum: We looked at it together didn't we (Yes)

You did lots of writing what was the writing about?
Rainbow fish , we went to deer park but we couldn't catch any fish. But we got some fish now , a little one, Ill show you this.

Is there anything else you want to tell me about your forest school?



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Did at easter ….(shows me writing)

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Yeh

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No didn't find it too hard

Was there anything that helped you do the work at home?

Mum: We looked at it together didn't we (Yes)

You did lots of writing what was the writing about?
Rainbow fish , we went to deer park but we couldn't catch any fish. But we got some fish now , a little one, Ill show you this.

Is there anything else you want to tell me about your forest school?
Maybe the tyre swing again, digging, going through the tent, I put all the tyres in the tent.

Is forest school better than breaktime or worse?
About the same, theres throw equipment and we play catch with it.

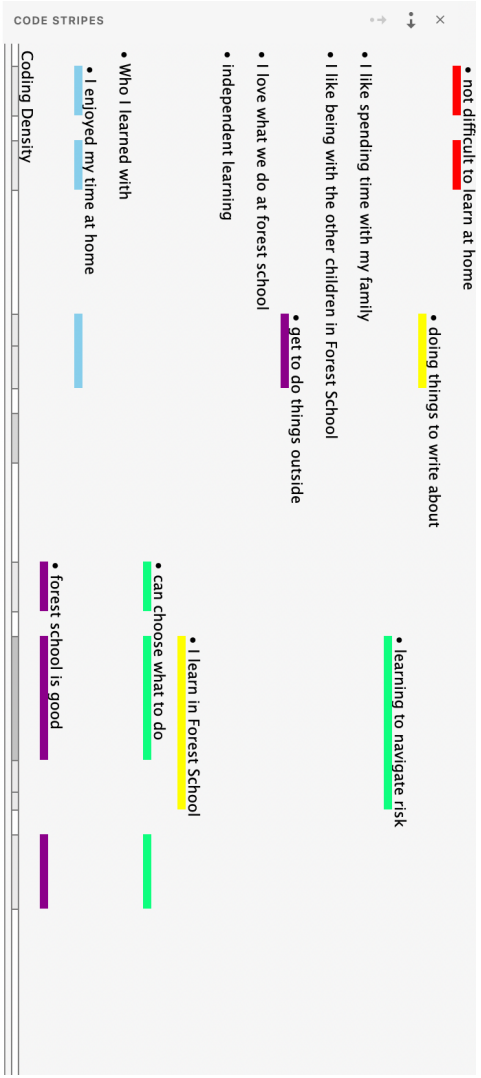
Do you play with the same people as forest school or different people?
Same people

What are the adults like at forest school?
Theyre good
They help us out.. we need a grown up to be able to go on the tyre swing.
Oh to keep you safe
Yes

If we were going to use the drill

Are adults helping you good or bad?
Good
Because I can go on the tyre swing or something

What are the grown ups like at forest school are they different to teachers?
(class teacher is at forest school too)
She is about the same at forest school.



Appendix K- Examples of how transcripts coded cont.(Parent)

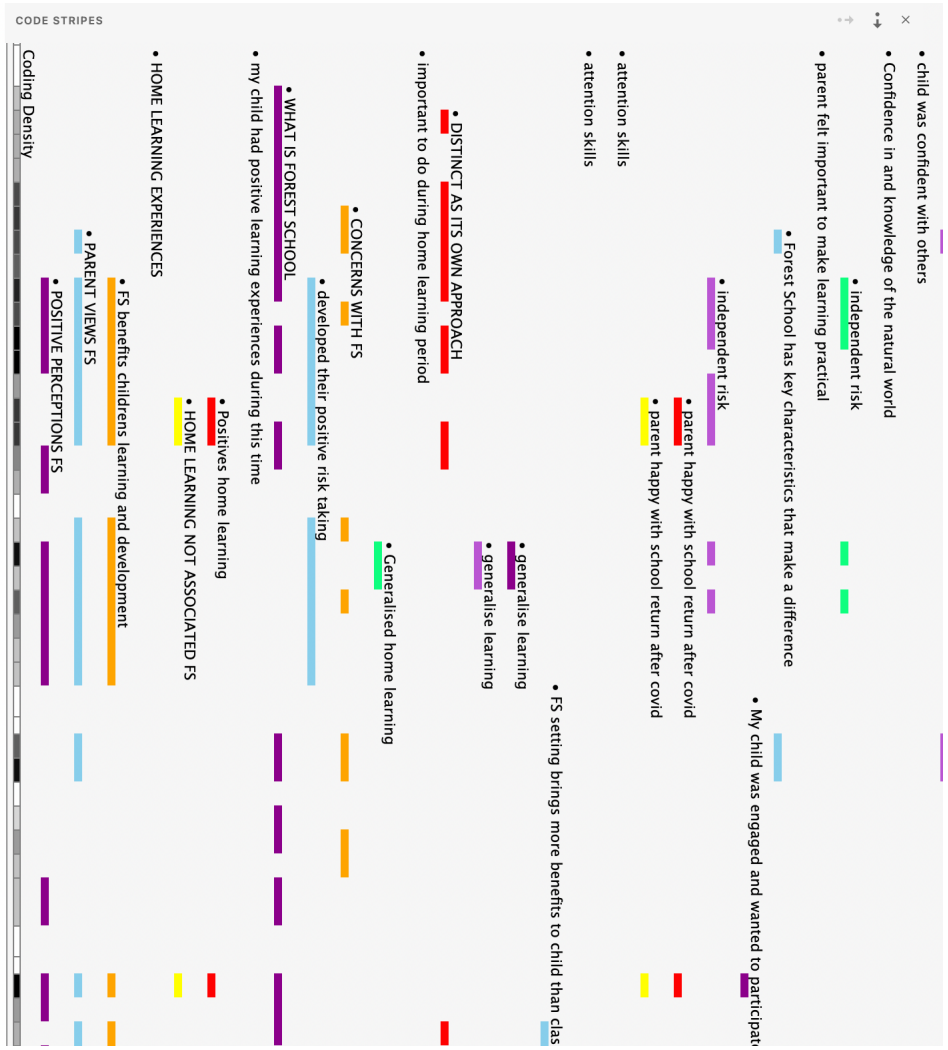
Adult 5

Can you tell me about your child's forest school?
So he started doing the forestry school activities in preschool initially it was like I know one year they did a lot of tree rubbings and then they did a lot of art work so I don't think they did anything as intense as when he went to school but I don't know whether there is someone who came into do that with them or just something the staff did at school but I know when he went into reception forestry school was started quite early on. He had only been in reception I think a few weeks when they started and he did it all the way through the summer and we had to buy them their wellies and their outdoor waterproof and all of that . It was quite a structured programme from what I can remember he did all sorts he said to me he was doing whittling with knives and bits like that and I think its great you know that independence of using a tool is a really good skill. You know it's the same as what we promote in scouting, you know yes we give them axes but we teach them this is the right way to use them and this is what we don't do. XX is quite confident with things like that in using tools and things . So he wouldn't think twice of going in the kitchen you know and cutting up an apple or using an apple cutter and things like that because he has built that confidence up. You know I do think forestry school does help that type of thing and skills. I know he has done fire lighting and things like that because I remember them doing a little campfire and having little marshmallows and hot chocolate.

I remember him panicking a little bit because he doesn't like hot chocolate or marshmallows but I remember them teaching them actually how to do the firelighting and he I light candles indoors and he knows not to touch them, we've never had an issue you know with him going over to them. He can confidently light a candle himself, with supervision obviously. He is quite confident doing those types of activities whereas my older child was never like that and didn't have any forestry school experience. So again I think the difference between them is quite .. he has got the confidence to do those types of activities

So did he go weekly, was it one afternoon a week?
Yeh I think it was an afternoon because I think they wanted to come home in the clothes and the mud and all sorts. I think they did it for half a term at a time it was like a half termly rota. So they did it from … then it would be the next classes turn, then he would do it again later in the year. So as far as I am aware the school just have a rolling programme and I believe they take it in turns . Because of what I do for a living what I gather is they cherry pick children that maybe need that little bit more. I've only gathered that from looking at the timetable they put in the newsletter and you can see there's some handpicked children from each class that go on there.

Do you think it benefits those types of children more so?
Yeh I think so my I think my eldest son would have loved it he suffered well he had speech and language difficulties when he was ..he's 15 now…when he was at primary school in XX. I don't think they did …they did outdoor education.. it wasn't forest school activities …it was



very different I think personally … you know he suffered a lot with anxiety at school. If he had something like this where he was going into school knowing he didn't have to go into a classroom and learn he was actually outside to do something really fun and still learn. I think it would have helped him a little bit more and do his confidence in those activities because putting him in scouting, he has gone right the way through scouting, he's gone all the way through, beavers, cubs, scouts; he's now an explorer. He's got so much from doing that, do you know I think if he had done that in school and made that connection you would have seen his confidence come out a little bit more.

So it sounds like you're saying its benefits them doing it more in school because they kind of generalise that confidence whereas if they do it as an outside thing its harder to generalise?

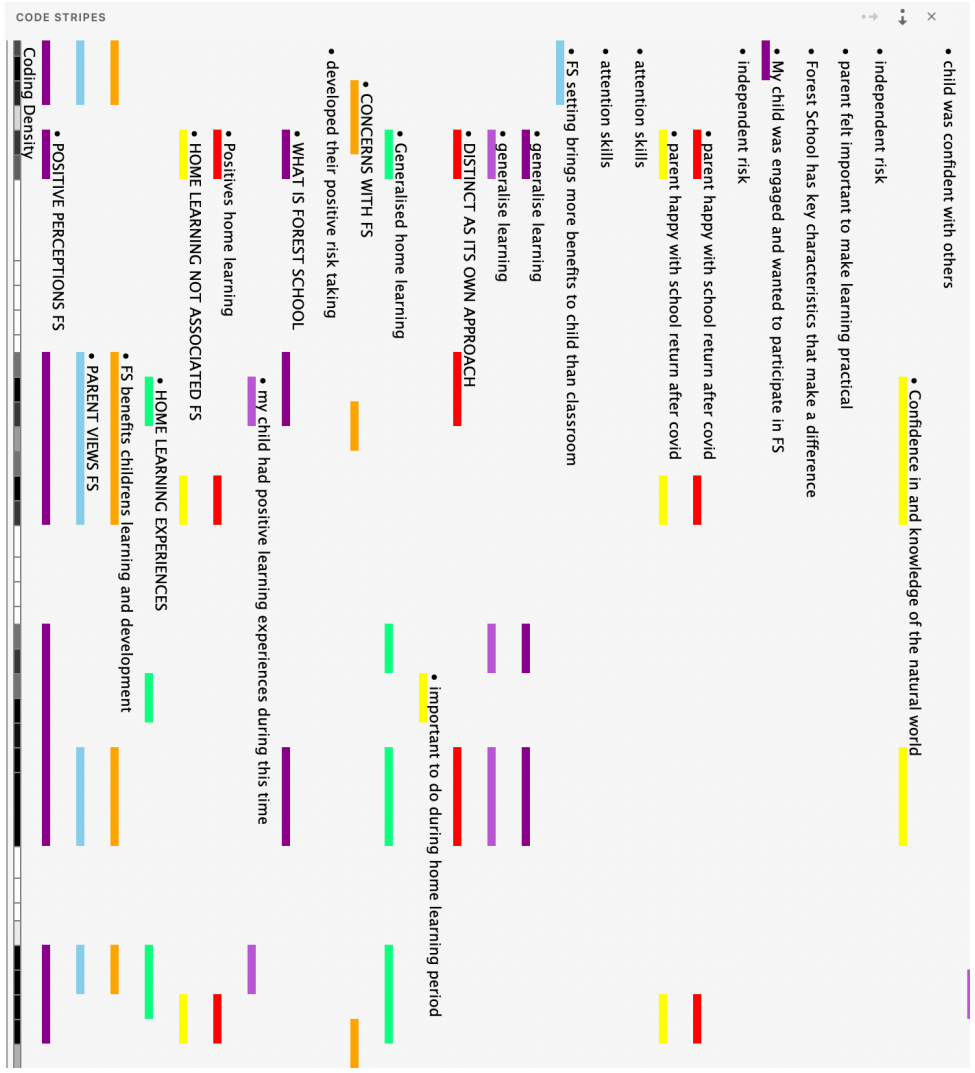
Yes I think so , yes I think so yes, you know I think its something I don't know with a younger one even with going to the forest school with the woods behind me, he'll talk me through everything he's done. We did dens, we did this. He knows all the little areas as well. He can walk you all the way there . I don't know if they did some kind of song or I don't know how they did it but you know he's really confident in taking me around those woods now and in the way, telling us where to go and what we are going to end up. I don't know if some of those mapping skills and things like that are included, Im not sure . I guess he is a lot more confident in taking lead you know and

Have you noticed that anywhere else or is that just in those outdoor spaces or just those woods?

Oh no everywhere, quite often in the evening , I'll take you here today and we'll go around and go all over the place. He is quite confident, I know they did a lot talking about different types of plantage and foresting and things they were doing in. So he's fascinated when we do go for walks, quite often he will take his magnifying class or things like that . He just loves walking around looking at the leaves and colours and some of that language that comes from that. You know going onto my passion which is vocabulary, you know he has a really lovely vocabulary and he wouldn't think of anything of trying to describe what is around him and vocabulary and plants and what they are he has sort of developed that so I know that's a big part of it.

Can you give me an example ?

I mean he has a lovely vocabulary the younger one, he'll describe anything to you really, he's got a really .He'll ask questions you know how can I , what would be a good word, you can see his thinking how can I describe that . I think one of the ones he tried to go in recently we went into the woods and the mud and we trying to think of different words to describe the mud. He'll come up with lots of different, he's got a good vocabulary; again I don't know if that's part of it because I've never observed one of those lessons unfortunately. That's not



something Im overly sure of its just what he comes home with and tells me about.

I know a lot of people have talked about extension of nature vocabulary
Yeh bugs and things like that, he'll quite happily and quite often, I mean I've got to be honest, I'm not aware of all these bugs and insects so quite often we'll come home and have a look and see if we can find it online. We did that with some leaves as well, we found some unusual red and green leaves once, I couldn't find the exact one. But it shows that he has got that interest in nature , another example is a house round the corner, they've got some kind of ..I don't even know what they are to be honest..its red..some kind of flower with something on it. We had some kind of purple and white flower bit of a fruit on it. Now if they fall on the floor he is well aware that he doesn't pick things as well so he came home and we sat for ages trying to find out what it was called and what it might be. Yeh fascinated by it. I definitely think its helped his interest in nature a bit more and going by now into the woods and things like that .

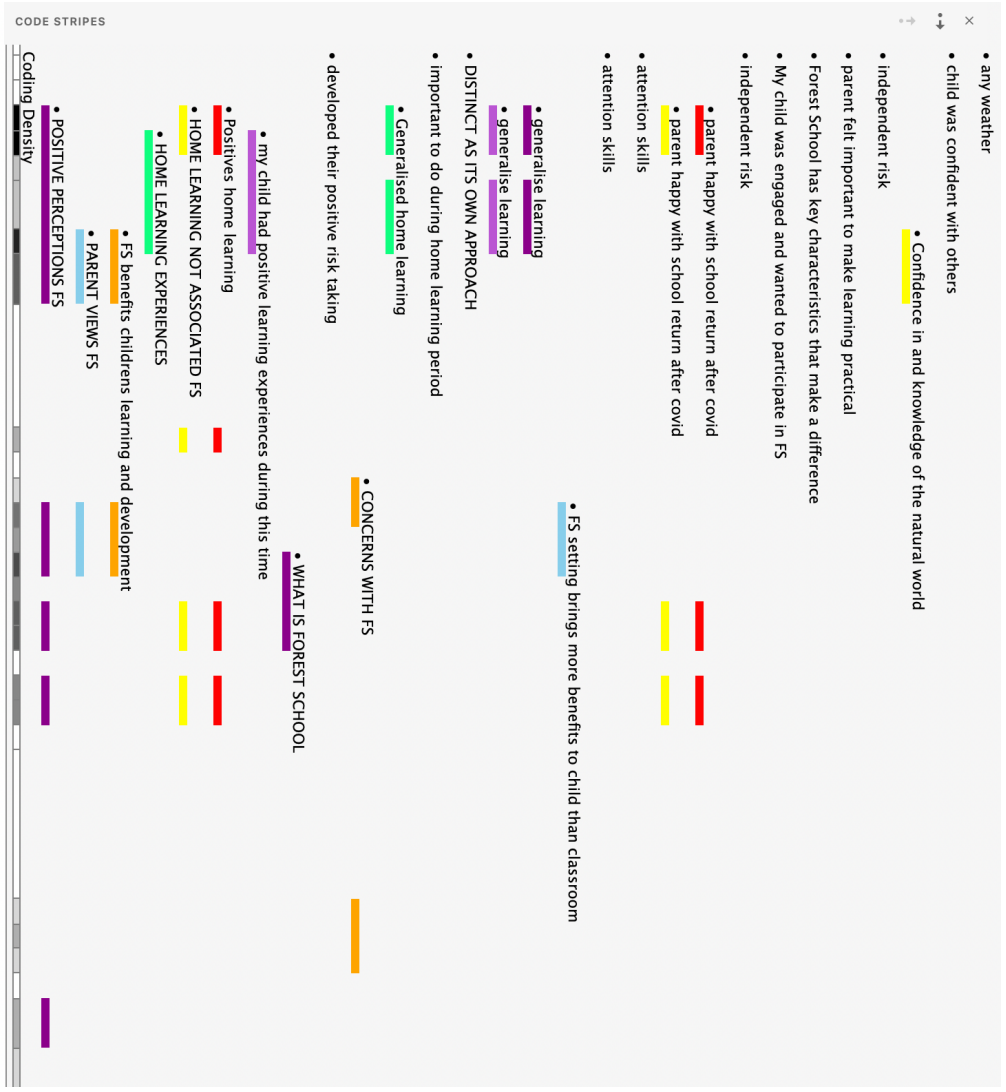
So outside of the forest bit what was that like? So his school experience generally before lockdown
Really positive to be fair Im really lucky with him to be honest, he's my little jumping bean. He's quite confident with everything , he's quite sociable as well which I think always helps with other children.
But he's definitely an outside boy , he spends 99% of his time outside. For the first term I kept saying are you going to draw mummy a picture, when is mummy going to get a picture come home. But as a staff because the lady who did do the forestry school took over she worked in reception so there outside area is lovely. It's all sectioned off they've got mud kitchens and thinks like that , outside access, they do lots of planting and growing . It's a lovely outside area I think they are quite lucky there for what they have got.

The reception is obviously free flow so and even before lockdown even in year 1 and 2 they were quite outside.

Yeh you know I always think he has been quite confident in you know being outdoors, you know he would quite happily spend his whole life out there you know.

So has that helped him to thrive more in Forest School or ?

Yeh no I think for him he is quite a natural outdoor person. Very similar to me I suppose, I would much prefer to be outside all day than I would indoors so I just think for him forest school was quite natural for him. It wasn't a big shock of oh Ive not done this before, he's gone through beavers, he's been to camps and seen what his brother has done. His grandad is a district commissioner for scouts(?), you know we've been to jamborees since a young age so it is quite second nature to my two. I think the school are very good at utilising the outdoor space and getting the kids out in fresh air as much as possible. Obviously even more so when they went back to school during covid and after the lockdown they were further. They said make sure they've got lots of warm clothes because we will be outside as much as possible



How did the school work during that first lockdown period?
Yeh same as all the other schools, you know me being a key worker they gave me the option of sending him in I think they had a week where they made sure it was covid safe and they obviously said they would give us a choice. Every week they would give us packs home for the children I think that was more so the staff were amazing. They would be in the reception to say hello to them in the morning even though they weren't going in and then as they opened up again in September and they went back all the staff came out dancing singing and you know . They are amazing and they just do that all the time that is just part of the way they are. They couldn't wait to get the kids back in. They did try and integrate the outside as much as possible very quickly got clubs and stuff up and running within their bubbles which I was quite impressed about. So he joined tennis club which was the outdoor one and then an indoor one which was computer club. So they tried to get things as normal as possible for them . He stayed at home because I had to shield unfortunately the first time round. So I shielded up until the end of july I think it came to an end, when the numbers dropped down you know I felt more confident going out . Ive not had to shield this time round.

He didn't go anywhere for quite a period.

When he went to his nan and grandads he would be outdoor most of the time playing in the garden.

So what kind of stuff was he doing in the garden, how was he with school work during lockdown?
He is more of a hands on so we try and do things, we'll do whats expected of us and then we try and elaborate on them. So one of the ones he's doing or we are going to attempt to do today or this weekend is he is doing some artwork around an artist who used natural materials, I cant think of the name of it off the top of my head ambilico or something like that.
So what we're going to do is Ive got a little bag out for him and when we go on a walk later we are going to collect some flowers and leaves and twigs and things and then we will try and recreate his own portrait in the same way. So you know that's not what they've asked us to do but that is something we will try and do to kind move learning on that is a bit more practical for him.

How did you guys come up with that idea? Was that your idea? His idea? Joint?
A bit of a joint idea really you know try and encourage him to go out for walks as much as possible. Normally he is charging around on a scooter or something when we do go out. You know its nice to go out for a purpose. Over the summer in Sainsburys they were selling little packs of explorer kits they came with little bags you can go off and It would tell you what to go and find. Find 10 beautiful flowers or find 10 interesting looking sticks . He loved doing that, he made his own binoculars and his own magnifying glassall home made of course, he enjoyed it. I think you know giving him a purpose to go out and do something benefited him a little bit more than it just being on paper.

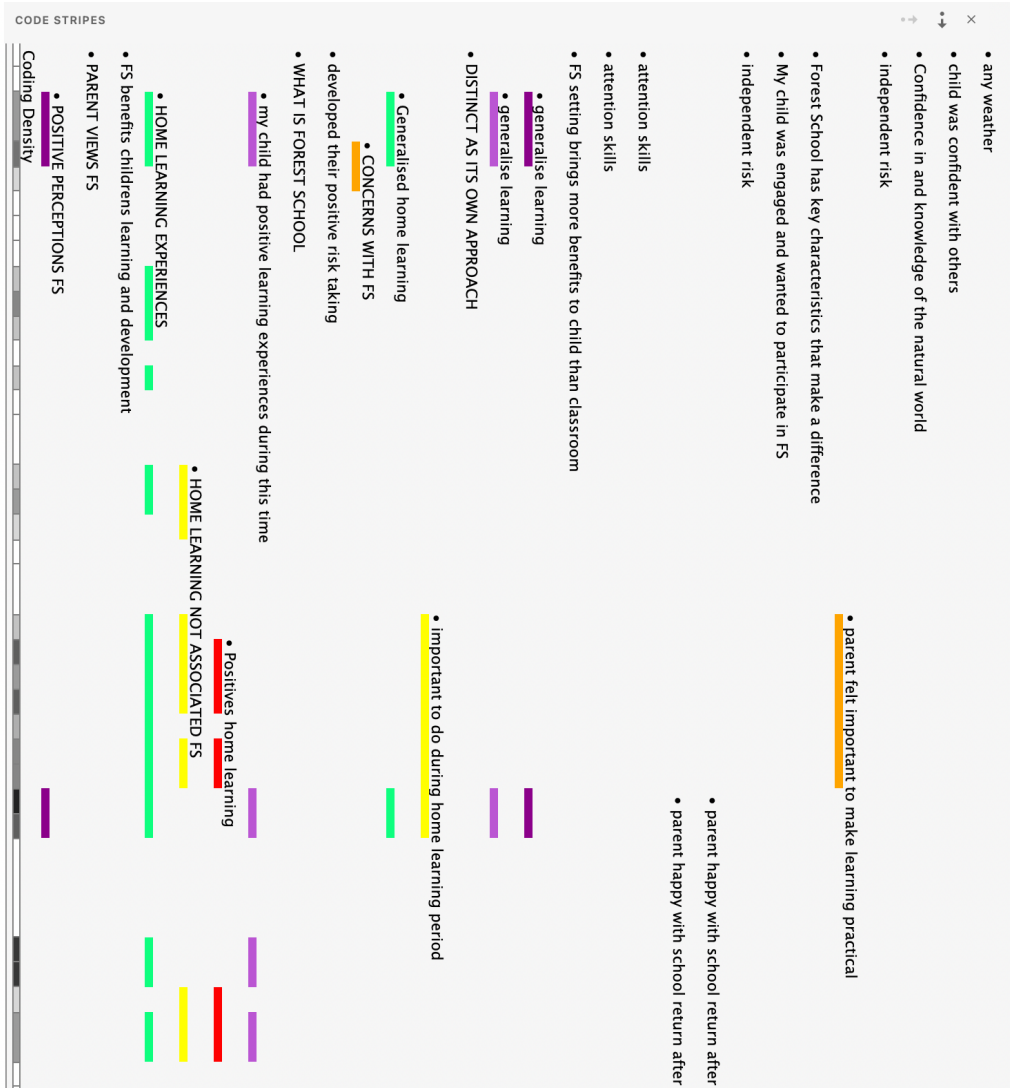
So was most of it to do with collecting things from the environment or was there anything else ?
Yes mostly collecting things from the environment we do have like the bug finders and things like that he does enjoy that. He is quite confident with worms and bugs and things like that so we did have our garden done over the summer, he was quite happy finding worms. He made a little wormery out of a bottle of worms and things . He does enjoy that he enjoys anything to do with nature I think to be fair.

Was there any times it got difficult did he get bored did he get upset.
Not really he's quite well rounded I think do you know he does like a lot of screen time, I try my best but its hard when you are at work all day. You know they've got to entertain themselves a little more. Ive not let them go anywhere else atm because you know numbers are shot up so Im not confident mixing with anybody else including his cousins unfortunately. You know he never really gets upset he sees his friends through zoom , he has that option to do that everyday. The first lockdown we had that wasn't set up for his class very well. It was only ones the mums had set up with the teachers support but this time round its very well organised do you know I feel . He sees his friends everyday, if he wants to, he doesn't have to join everyday. He sees his teachers and gets personal time with them on certain days. I don't think he feels like he's lost very much. He does keep saying he wants to go back to school because he enjoys school. That's the only upsetting part of it really he does enjoy being social you know with his friends. I think he understands though he's quite articulate he understands that there is this horrible bug around we have to take precautions.

Was there anything that helped him learn?
You know having a teaching background I tried to make things as practical as possible so whatever it was I would try and buy resources you know we would do weighing. I didn't have any of the proper weighing scales so I got some of them from school. So just to say he is very hands on he is very practical that's how he learns better. Whatever the topic was you know I think they were doing painting his art was something to do with mixing colours went out and got art supplies . Just something as hands on as practical as possible especially whilst we were shielding and not going out . Just getting him outside in the garden for lots of fresh air, you know we've built him lots of dens out there so he has got his own space in the garden and a tent so he loves that, do you know that is very outdoorsy if that makes sense. 21:36

One of things he likes doing is parkour, you know it's a very outdoorsy thing.

Was there anything that got in the way of him learning at home?
Erm yeh probably just me working that was the only sort of me feeling more guilty more than anything, you know he doesn't interrupt me when im in meetings . You know when I see colleagues and their kids are jumping all over them, Im so lucky that he is really good he understands that when mums working, im working, when ive finished ill give him that time he needs. But no I don't think anything really did affect him very much, you know he always seems like a happy little lad and the school will back me up on that. He's always happy all the



way through whether he is going out or staying in nothing bothers him at all. Yeh he's quite well rounded . The older one is the complete opposite you know you'd have to drag him to school kicking and screaming but as I said you know he didn't have that same XX . It's a very small school that he goes to . All the staff know him by name. Even when we are out in the street even when we go for a walk and we bump into any of the staff there. It doesn't matter what year group they all know and say hello to him.

So a sense of togetherness maybe?

Very much a family over there do you know, everybody knows everybody . But the staff are all lovely and I think that's a big part of it, my eldest didn't get that. First day of every term the staff all dress up or they have music playing and theyre all dancing outside and the kids back in. I think they had welcome back banners when we went over there in September 24:16 I think they were quite excited to have them. The headteacher over there was lovely I mean I don't know if you've ever met but she was lovely she is just crazy with the kids I mean she's just she does the assemblies where she does all the roles of the children talking. Then she does the singing she learns to play a new instrument and the kids love that. I mean you see him smiling and laughing as if she is actually there with them, very supportive I think.

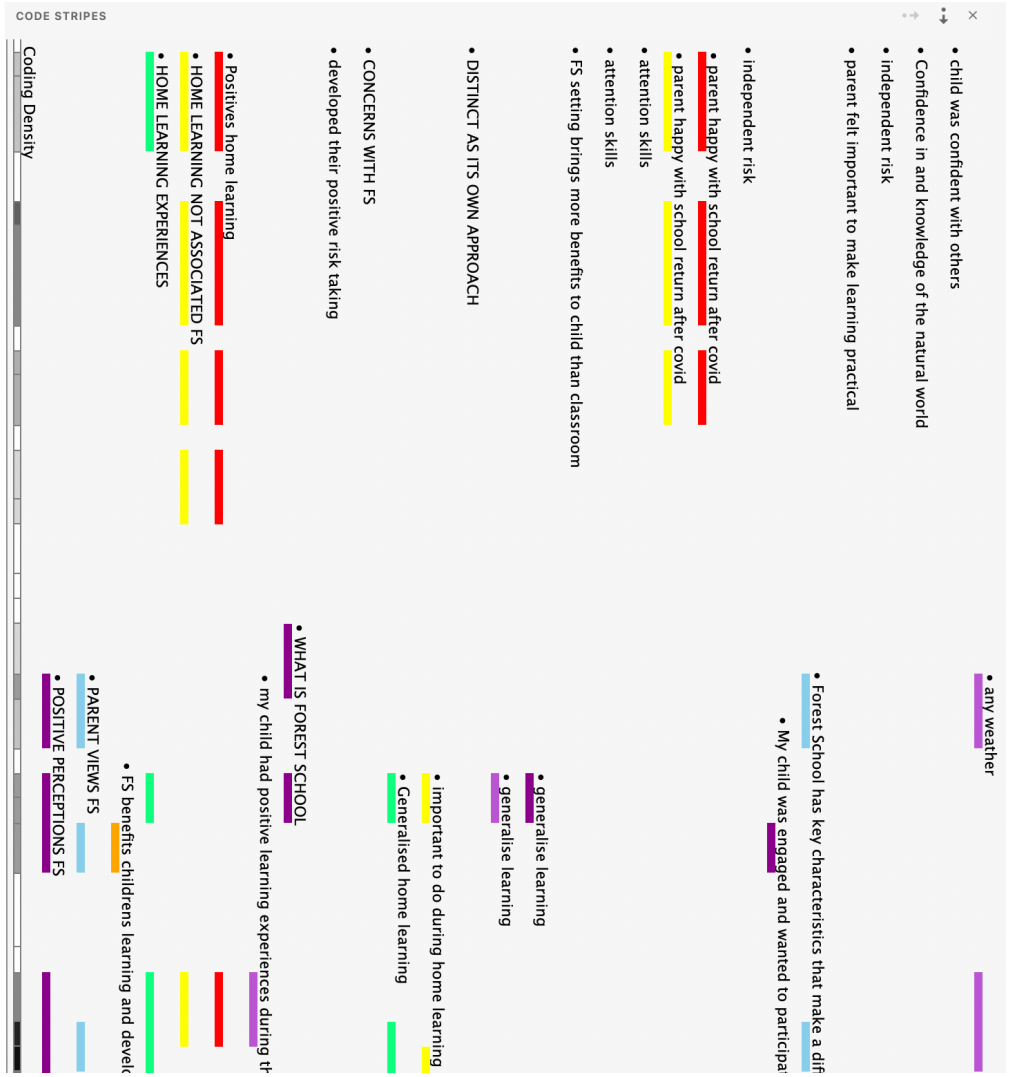
I think the first week he went to school in reception she gave him a little bouncy ball in a bag and I didn't take much notice of it until I got home then there was a little message in there well done cody for bouncing into school everyday. That's something really small isn't it but actually for him you know that's a really sweet thing to think just to have the confidence to think Im doing the right thing, I can carry on what Im doing.

Is there anyway they did that just in forest school?

Yeh they got certificates and things from forest school I think I cant remember if they got a weekly one if they said what they were doing or . I think they put some photos up on their website to show what the kids are doing . They are always very quick to adapt things , you know with the weather in their final thing where they had biscuits and chocolate and marshmallows and it was pouring with rain so they all sat on the bus and had it. That was brilliant do you know they were like we sat on the bus and we had a really lovely time with it. You know im sure she used to do at the end she sent home some kind of leaflet so you can do some of the activities at home . Which I thought was quite nice because you know not everybody has had that experience or knows what they ought to do. But he really enjoyed it that. He used to ask everyday is it forest school today? Is it today?

So I know forest school happens in any weather? …Do you feel that he has ever taken that flexibility or we are just going to do it..

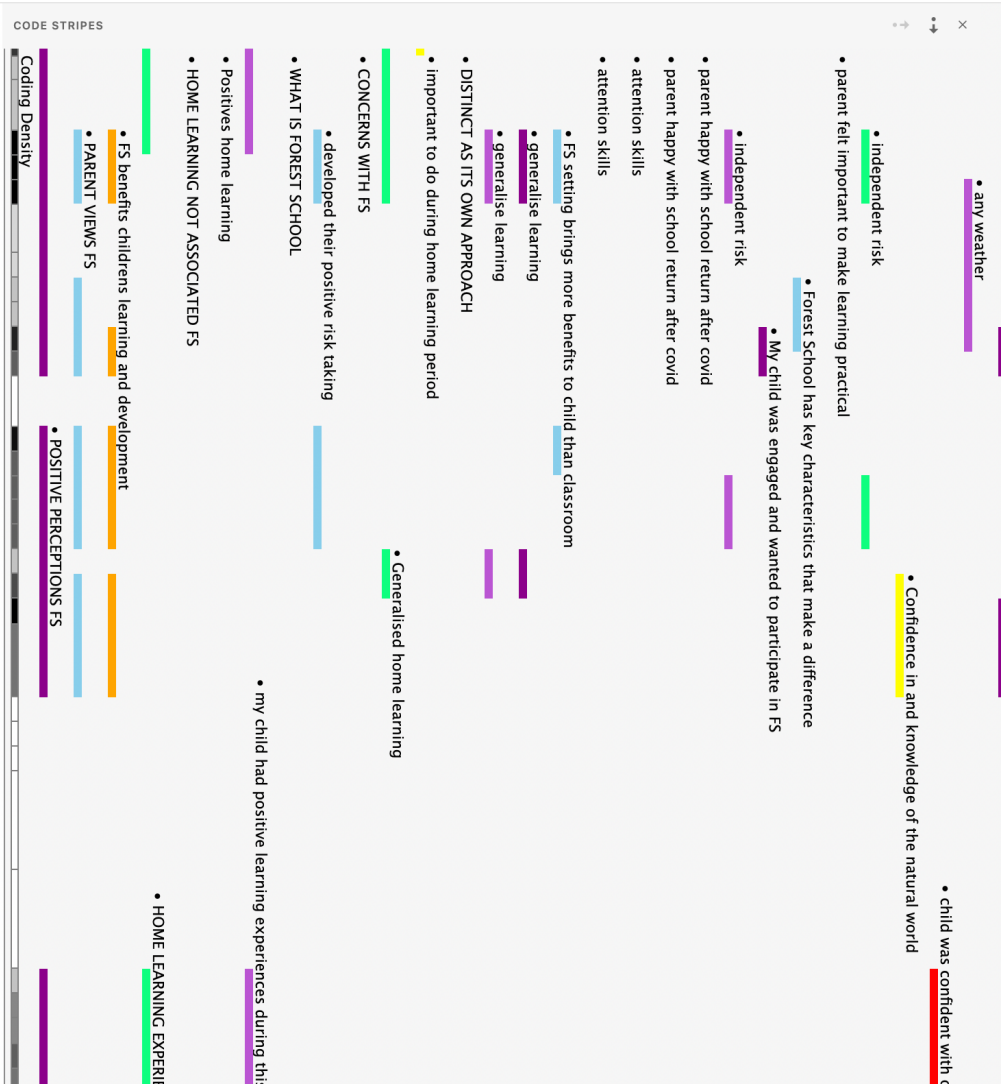
Definitely yeh you know he has never been bothered by changes in routine or things like that even in lockdown, he adapted to lockdown so quickly whereas I know for other kids maybe that wasn't so much. You know he used to come home from forest school and so most days we couldn't get the fire started so next week we're going to try something different and he



then sought of also went to his grandad knowing his grandad is high up in the scouting and said you know we did this at forest school can you show me how you do at it at scouting. So he was trying to expand that learning a little bit because one of the ones we used to do at scouting would use a chemical that you can use on fires. Its not something we do very often anymore but it was something to sparks up and then you know. So he was kind of asking about things and how can I extend that. I think last time we went round he set a little bonfire up and he was getting rid of all the paper so he's got that confidence to know not to get too near and to keep back and things like that. Yeh the flexibility never seemed to bother him not sure if it is because what we do, kind of an expectation that we will be flexible. I can imagine from the staff that we are doing it at the time they modelled that quite well . Oh that didn't quite work so we are just going to try it a different way.
He has always been really flexible so that's good. Didn't get upset by anything, even when there is rain and he is looking forward to sitting round a fire but you know they ended up on the bus. Wasn't bothered by that at all. Always come home buzzing, and said how much fun he had had and what he had done yeh really really good.

Was there anything that he utilised during lockdown that he had learnt at forest school?
Erm yeh I know they've done some whittling. The fires the I think they did a little bit of cooking they just started to get more interested in cooking. I know they did some on a fire but I cant remember what they made . Again do you know he likes, he is quite happy coming to the kitchen when Im cooking then have a little look always encourage both of the boys, I mean my eldest can cook a full dinner. Erm and he has been able to do that for many years, that's not a new thing as a teenager. Erm I do think you know if you can cook outside you can cook in the kitchen, so its trying to transfer that. You know the forestry type things you know knowing what they can and cant eat, I always thought was quite good . You know because Ive seen kids pick a mushroom up and go to eat it and actually some of those are quite dangerous whereas you know he will is that one poisonous is the word he used. Is that a poisonous mushroom? Oh I actually don't know we would have to take it home and have a look or take a picture of it and have a look. He's never been afraid to have a look at whats around him. To be honest I cant remember what else they did at forest school to , it seems like such a long time ago. Its been over a year now since he last did it it would have been before Christmas now, last year was his last experience because I don't think it was his turn last January then of course they've not done it since.

Are there anymore general skills from forest school?
Yeh you know he is really confident with adults , he will talk to all the staff at the school he will talk to any adult really and even when I've been on meetings he knows there's certain colleagues he can say hello to and if I put my hand up no he will go off and entertain himself. But if I say you know come and have a go then he is really quite articulate talking to them. He will ask questions, he is confident with other adults. So yeh you know he talks to his nan and grandad quite confidently on the phone, he doesn't always have me to be with them to talk to on the phone and things like that . When we are out and about he will happily talk to some of the staff members we bump into from the school even those he is not overly familiar



with. And he knows his boundaries and knows that theres some staff he can have a joke and a laugh with and ..
Because the site manager he lives over the road to us and he knows he is a bit of a character and he can have a laugh and a giggle with . He can have a joke with him because you know that is the way he is with the kids . Whereas one of his computer teachers who lives literally opposite us he knows she is a little bit sterner and that he will say good morning and hello. He is allowed to pat her dog when he sees her but he knows not to cross that boundary. I do think you know things like that are really good.

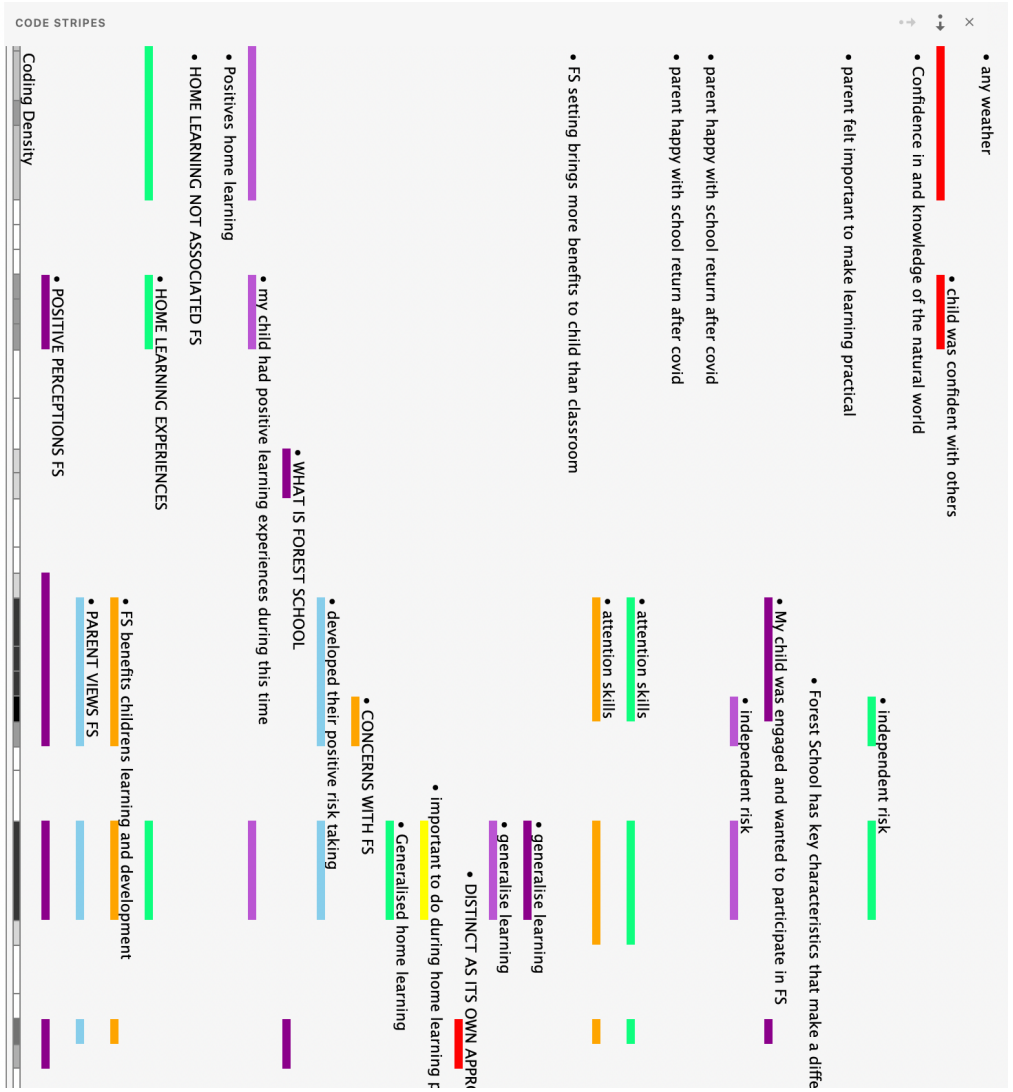
Do you think forest school has contributed to that or do you think that's maybe something that comes from how you interact as a family or somewhere else?
I don't know really because I mean if you met my older son he wouldn't talk to you. He doesn't like going into a shop because he has to say something to somebody. Bearing in mind I brought them up exactly the same, you know same dad and everything so they have had different experiences. Both went to small primary schools although different primary schools but both very small very family oriented schools I don't know what it is I don't know I mean I suppose the nice thing for forestry school is for him he already knew one of the adults there. I know she has employed others when she took it as a business but maybe they weren't familiar to him. He has probably been quite lucky because he was familiar with the adults that was there and obviously his teacher anyway.

With that type of activity you've got to listen, you know he is a bit of a bull in a china shop sometime and he's got to you know we call him a Tasmanian devil . He is one of these kids that is like hundred miles an hour all the time. One of the things with forest school is the safety element and making sure children are safe and follow rules . You know because of the dangers that can be associated with some of the activities they do in forest school. I was saying you've really got to listen, you know make sure you take note of whoever tells you what you need to do. You need to pay attention . Maybe help him a little bit more with his surroundings you know be aware of the dangers more . He's the child that would be half way up a tree if Ilet him you know he would climb trees and thinks like that.

He will know even when he is doing those more dangerous activites I don't know even when we were barbecuing over the summer
Good example is when we were doing the garden he was really keen to help but knew there was some activities that he could do and some he couldn't and some he would need a lot of guidance with. You know never stop him doing anything, gave him a paintbrush and got him to paint the shed over the summer but like I do think it teaches them risk management and listening skills I think its really good for their listening skills .

Why is it good for their listening skills

Because of the dangers associated with it you really have to listen. They do teach them new activities everytime they go which I think is quite progressive programme they sort of have. You know sometimes his listening skills aren't the best because he is so excited all the time

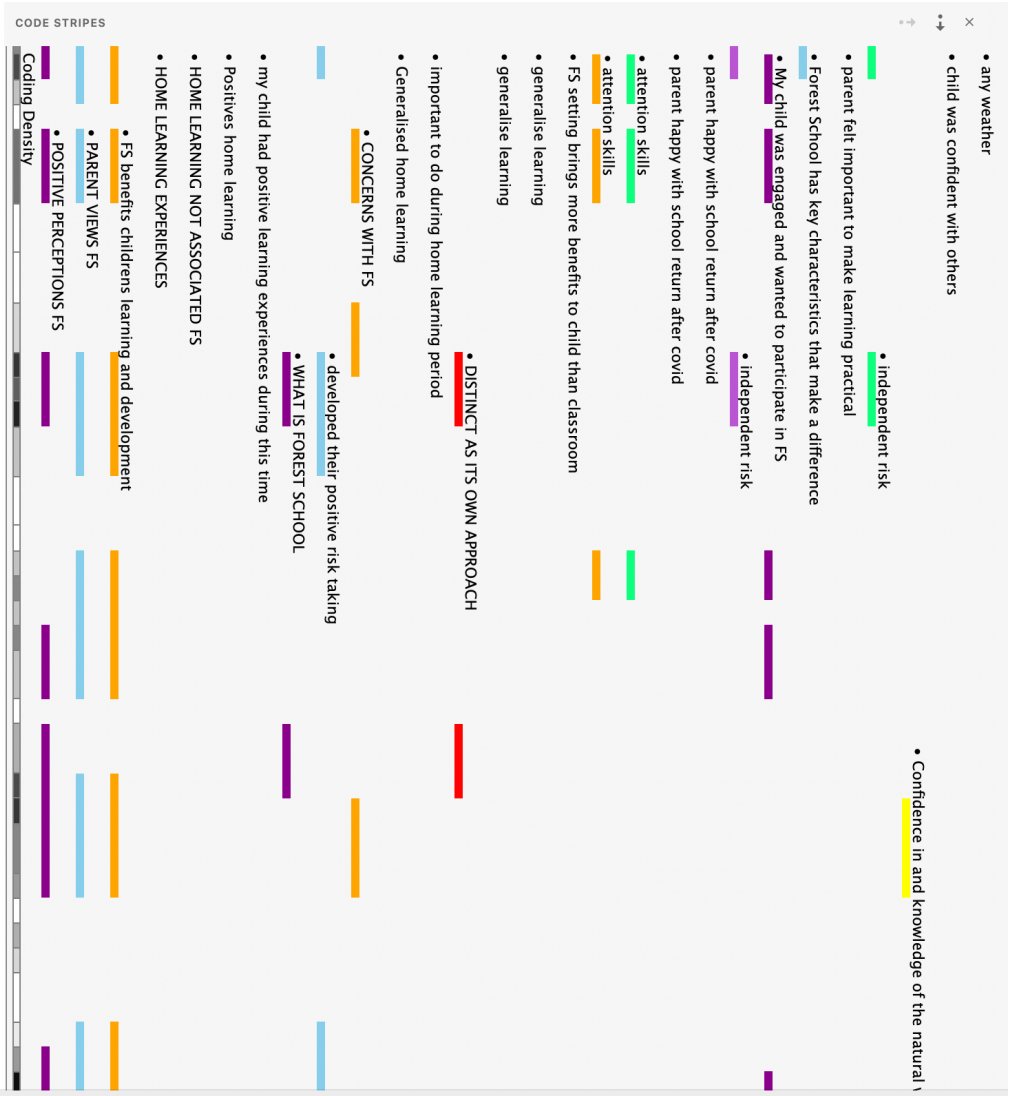


by everything. It did ground him a little bit that he has really got to listen because it is dangerous and I can imagine the staff being quite hot on that because you know its only small groups as well that used to go it wasn't a big class. No I think it definitely developed his listening and that came through in his reports from reception to year one or year two. Reception he never really liked to go in and do everything because you know he didn't like to listen . He didn't want to be tucked away doing an activity he didn't want to do. He wanted to be in the garden all day, you know year 1 it came very formal and actually listening skills had to be a big part of that and so listening skills are quite good for them.

…I know a lot of people are quite worried about forest school being for older age group But it sounded like it might help you have skills near the year groups.
I think it is really progressive I know my dad got roped in a few times to forest school because they were low on numbers and because he was dbs checked and whatever. He said it was amazing because you've got these little children sitting there and most adults get quite worried about taking them to the woods or having them round a fire . If you teach them well and explain really clearly what they need to do and I think its very repetitive as well, especially if they are doing anything with fire work. They all have little stools or logs to sit on, and theyre not allowed off their log. Its very much they stay on there unless they are directed to move. So its very much following those simple instructions from a young age you know I think they are quite capable of doing it .

Is there anything else that helped them?
Listening to instructions listening to activities so she needed to follow those instructions quite carefully. Not necessarily the group he would have played with in the playground, all abilities . A real mixture of I quite like its very inclusive do you know because it doesn't matter what is going on they can all access that one way or the other. He really enjoyed the social element of it as well you know he liked the children he was in a group with and I don't know if that was done purposively Im not sure. I don't know how they organised the groups but I thought that was quite nice.
Good on memory they always go back over everything they've learned, the biggest session highlighting what they'd done the previous week, looking back at what they've done, how they would move forward. That was quite good, they encourage all the children to speak as well, there was an element from what I can gather that ..Ive not observed it so I don't really know but there was an element of circle time each week where they might share something ,or develop their expressive skills or good language and modelling or I don't know what they've done but its all going to benefit them in some way.

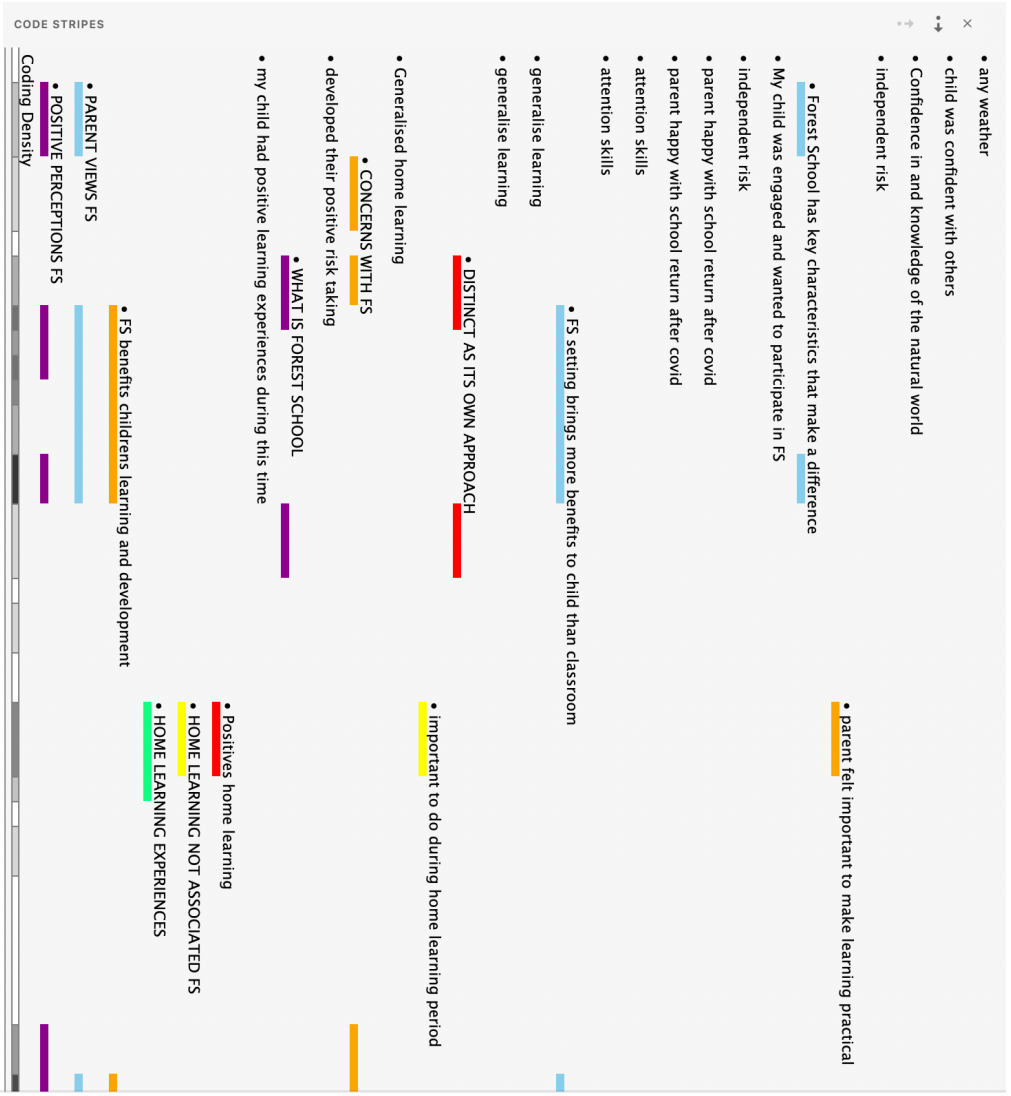
It's the cross curriculum side of things as well because they would have done measuring and they would have done looking at different textures. You know if you think of the different subjects I know they did some art work one week and came home with some pictures . So I do think cross curricular activities within that are quite nice as well. Putting some of that into real life; I cant remember what they were making but they made something over a period of a couple of weeks and they remember using tools and all sorts to make it I think from what I can gather. That kind of sense of achievement that Ive made something he loved to come



home really buzzing from it.

Do you think its worth the schools time and resources?
Yeh absolutely we are quite lucky where we live, the woods back onto their school, there are a couple of entrances that we can get into quite quickly. You literally come out of the school turn left walk across the carpark and you are in the woods. Schools in this type of area I think it works really well I can imagine that's not going to be the case for some of the inner London type schools. Places where outside its not as rural as what we've got here but I do think theres elements of, going back to my older son, he is actually a retired outdoor pursuits teacher Mr H who used to teach me when I was at school and used to come in when I was a teacher to teach the kids. He did some very basic skills like outdoor skills, tents and things like that. They still enjoyed it wasn't the same as forestry schools but it developed from that . You know but the idea the time out to do something different that's practical they might need later in life would be really nice. Again lucky the school that my older son went to had a big field that we could use so again we were quite lucky. I honestly think going forward theres so much emphasis on academc work and levels and progress and actually they make just as much steps by doing some of these lovely activities and learning some of these real life skills. I think every school should have somebody trained because I don't think it would be a big ask for someone in the long run they should all have equipment to do some of that as well .
Do you think there is a difference with outdoor learning?
It is different isn't it I used to work in reception many moons ago and we used to try and get as much outdoor learning as we could. I had some funding I had loads of help from parents that were willing to come in after school once kids come in after school , we had a massive pirate ship outside. I know things aren't like they used to be in terms of time but I used to love outdoor learning and you would see the children really thrive with it. And the amount of learning you can get out of a sandpit and some water is just amazing you can meet so many different criteria and its all hands on and practical , its real life to them. Ive seen lessons indoors to maths or something like that. I think how much are they getting from doing worksheets or looking at a screen, whereas practically they will remember if you do it practically. They wont remember the other way or on a screen but again there is a time element to all of that and planning and costs. What I would like to have seen is I have to be honest I love reception I think its great but they very quickly go into year 1 but they are more sit down . It's a shame that more classrooms don't have that outdoor learning frame as part of what they do day in day out. Even the opportunity just to have a desk outside, children can go and sit on learn on, even if they walk out in the sunshine or in the wind because that's what they like to do, to go outside a bit more. But not as something special but as something they do day in day out .

Do you think forest school should be available to all? Or to particular types of children first?
I do think those that lack confidence or social skills even with children with SEMH needs or behavioural needs you know quite lively I just think having these activities where they are really hands on and they just . There is quite a lot to the sessions. I mean they used to be all



afternoon and he used to come home and sleep afterwards. They are quite intense you know theres a lot that goes on in those lessons , I cant honestly think of one individual group that wouldn't benefit from it. I honestly think all children all abilities , some more so than others, those that maybe struggle being in the classroom a little bit more . Im thinking of your adhd ones maybe , children that need to maybe let go a little bit more , you know doing outdoor sports more often would support them . To be outdoors in general would help , . If you go back to the outdoor learning when I was teaching in the classroom . Quite often I would have some of the Year 6's I don't know if they were going swimming and there was a group of children that couldn't go , they would often come down to me and you know I would let them join in with what we were doing . I would get them to kind of be my assistants and outside you've got this great big Year 6 children outside knee deep in sand playing with trucks or measuring . Its quite sad in a way that they don't have that little bit of time because they are still children . Enjoy that kind of hands on experience is quite nice and I do think it is good for all abilities all ages, I don't know whether the special schools do forest schools. That would be quite interesting .

Yeh I agree I mean im still learning about those SEMH provisions and what they offer but you know having some of those provisions, is it circles farm was one of those ones we have access to and they really thrive there. Because its outdoors and they can have fresh air everyday and get away from their screens and learning at the same time. I know one of the special schools I used to work in many moons ago before I was a teacher . They had horticultural and agricultural activities as part of her curriculum. They would activities outside in the grounds or they would get on the mininbus and go to writtle. All different abilities and some of those were quite physical disabilities as well. It was all sorts it was an MLD school but that children really thrived there and did go onto whittle college afterward. We would go to greenhouses like you would on a farm they loved it

Anything else? To do with home learning

For me Ive just tried to make it as practical as possible, just because I know that youre working all day most days actually when I do get time with him together in the evenings we'll try and do more fun stuff to make it a bit more memorable the staff are really good at responding back to that so anything I send in pictures or anything Ive done they do personalised comments back to him. Either the headteacher or teacher will also make comments in the weekly assemblies. It is a lot easier to do during the summer months than when its cold and wet .

He is itching to get back to school now and stay there he says I cant wait to get back to school.