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Journeys through forest school: a model for understanding diverse educational experiences of children

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ABSTRACT

Forest school is a form of outdoor pedagogy commonly practiced in schools in the UK. Numerous studies record what is involved, and its impact on specific groups of children, but underpinning theories of why and how it works are less common. This article draws together research exploring forest school practitioners' perspectives on the significance of the outdoor learning space; what children learn at forest school; and how children responded to forest school sessions, to propose a model of how and why this pedagogical approach is effective across a range of children. The article suggests that children's ability to choose their own activities, coupled with the child-led ethos, and the more permissive outdoor learning space allow children to engage with and respond to forest school according to their own developmental needs. Further, the model considers how the combination of individual children's learning journeys come together so that, collectively, the whole class benefits.

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1. Introduction

Forest school is a widely adopted form of outdoor pedagogy which is commonly practised in schools in the UK, and increasingly being tried in other countries (Harris 2022). Forest school is widely acclaimed within the UK with proponents claiming it is beneficial to most children who attend (e.g. see Davis and Waite 2005; Knight 2011; Lovell and Roe 2009; Maynard 2007; O'Brien and Murray 2007). Forest school takes place in an environment which is novel and materially different from the classroom environment (Peacock and Pratt 2011), described by Kraftl (2013) as an alternative learning space, associated with different practices, norms of behaviour, objectives, and goals for learning.

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Numerous studies report on what is involved, and its impact on specific groups of children (Garden and Downes 2023; Harris 2022), however there has been little critical investigation and discussion of how this single pedagogical intervention can be of benefit to so many, different, children, or indeed if it is of benefit. As yet only a few suggestions for underpinning theories of why and how it works have been developed. These draw on a range of frameworks including the theory of ecological dynamics (Sharma-Brymer et al. 2018), self-determination theory (Barrable and Arvanitis 2019), Brofenbrenner's bio-ecological model (Murphy 2020) and theories of cultural density (Waite and Goodenough 2018) as well as developing a proposed theory of change (Tiplady and Menter 2021) (see Harris 2022 for further details). Practitioners argue that it is much more than 'mucking about in a wood' (Ritchie 2010) and provides a valuable learning and development experience for children. This is an area where practice has preceded debate and theoretical development.

Research was conducted in two phases: an initial pilot study with a single school identified broad research questions. These questions were then explored in more detailed research through interviews with practitioners to expand the scope of the research to more settings and children. A series of 3 published articles arising from this research report on practitioners' perspectives of forest school. They delve into details of

The significance of taking children from the classroom to an outdoor learning space;

Practitioners' perspectives of what children learn at forest school;

How children respond to forest school sessions;

This research focussed on children as learners within a forest school setting, drawing on qualitative data arising from interviews with experienced forest school leaders. The research focused on practitioners' perspectives of the processes of learning within forest school, rather than assessing knowledge and skills gained, and seeks to understand children's learning in this environment to provide a greater understanding of how different children are impacted by forest school.

This article draws together these findings to assess whether, and if so how, this pedagogical approach can be effective across a wide range of children.

2. Forest school in the UK

Forest school was introduced from Scandinavia to the UK in 1995, and has become increasingly popular (O'Brien 2009, Knight 2009). Adoption of forest school across the UK has varied. In 2005, there were 100 forest schools in England, and 20 each in Scotland and Wales (Ritchie 2010). A national forest school conference in October 2007 and the creation of a special interest group within the Institute of Outdoor Learning marked the emergence of forest school as a significant educational initiative. O'Brien and Lovell (2011) reported 1405 cluster group members (i.e. practitioners) by March 2010, and by 2015, the Forest School Association reported 12,000 people trained as practitioners. Blackwell (2015) claimed more than 1.5 m children, families, and communities have been touched by forest school (Blackwell 2015). In 2017, the Forest School Association estimated there were 10,000 forest schools operating in the UK (McCree and Cree 2017).

The practice of forest school in the UK varies across settings, with those in early years/nursery settings sometimes being outdoors most days, but in schools, often children attend for just a few hours per week or on a fortnightly basis, generally limited to between six and twelve sessions, though occasionally forming part of the child's teaching throughout the school year. Forest school fits within a wider ethos of environmental education, outdoor education, outdoor learning, and experiential learning. It promotes learning about the environment, within a kinaesthetic and memorable learning situation (Peacock 2006). It is claimed the emphasis on children's personal, social, and emotional development within forest school results in improving mental health (Maynard 2007). Forest school is said to provide a more holistic learning environment: in addition to learning about the environment children also learn social skills and citizenship skills (Knight 2009; Swarbrick, Eastwood, and Tutton 2004), and it supports physical and mental health (Lovell and Roe 2009).

Forest school fits in well with a range of educational initiatives in the UK, drawing on a range of theoretical frameworks encompassing aspects of child-led learning, learning through play, biophilia and connection to nature, negotiating risk, experiential learning, the Nordic concept of frilufstliv, attachment to place and place-based learning, and experiential learning (Harris 2018; 2021; Knight et al. 2024). There is a focus on learning through play (Fjortoft 2001), especially with younger children. Forest school was initially targeted specifically at younger children in the early years/foundation stage (Davis and Waite 2005), but is now used throughout primary ages and sometimes in secondary school (see e.g. Knight (2011)). The similarities between the forest school approach and other educational approaches and practices are summarised by Knight (2009). Forest school includes the use of natural materials (promoted by Froebel and Steiner) and learning through play (promoted by Froebel, Issacs, and Piaget), engaging in children's curiosity to learn (Dewey, Issacs), within informal settings and making use of the natural environment. Knight notes that children learn incrementally through repetition or building on previous experiences. Such experiential learning promotes deeper level learning (Laevers 2016). Knight (2009) also links forest school to teaching methods which position children as drivers of their own learning such as Reggio –Emilia and Te Whariki, and notes that forest school also allows children to learn at their own pace, a practice supported by Steiner, Dewey, Montessori, and Piaget.

Forest school is also embedded in wider trends towards child-centred learning and real-world learning and endowing the learner with skills for lifelong learning and the ability to adapt and change according the changing needs and circumstances through life (Posch 1993). A key element of the forest school experience is how it is lead, and fundamental to that are the following points:

> *Child-led* – children have a choice, in what activities they chose to do, how to do and develop those activities, including questions arising from them. They also have the space and agency to choose who they will work with, and where they will do activities – whether that be at the centre of a group, or in the periphery, busy or calm. (Harris 2018)

> *Start with where they are* – children have permission to step back to being a beginner, rather than being linked to a specific point in the curriculum. Repetition is a fundamental part of the ethos of forest school, which allows children to gain confidence in a task, and even develop a sense of mastery. (Harris 2022; Swarbrick, Eastwood, and Tutton 2004; Tiplady and Menter 2021).

Facilitation, not direction – children are allowed to explore and try to learn independently of adults, who are there to respond to questions, requests for help, or give permission for certain things. The higher parent/child ratio provides increased support for children who need encouragement. Children who need support ask for it. Children who are keen independent learners are able to do so. The self-directed learning pace engages many, and meets the needs of several groups at the same time (Harris 2017).

Avoidance of prescribed learning outcomes –there are many possible learning outcomes from forest school sessions, but sessions in themselves are not linked to the national curriculum and there is no set of learning outcomes to be achieved in order to be "on target". (Coates and Pimlott-Wilson 2019; Harris 2017, 2018)

Children at forest school are central to the learning process, actively negotiating learning goals. Rickinson describes students 'as active processors, and critical consumers, of learning situations' (Rickinson 2001, p. 284). In his review of learning in environmental education, Rickinson (2001) highlights the need for more research on the 'active way learners make sense of encounters' (p. 283) and 'the individual way in which this occurs' (p. 283). This article seeks to explain how forest school provides opportunities for unique learning journeys for children through examining what children learn at forest school and how children negotiate this new learning environment, and also how these individual stories of transformation come together to impact the class as a whole. It does this through addressing the following questions:

What aspects of the forest school learning environment support pupils' experiences?

What opportunities for learning are offered in forest school sessions?

Are there differences in the way children respond to forest school?

How does forest school support a wide range of pupils?

3. Method

This article draws together findings already published in a series of research articles (Harris 2017, 2018, 2023). The published articles took a grounded theory approach (Strauss and Corbin 1998) to develop a greater understanding of particular aspects of forest school. A pilot study observed 72 children who attended forest school sessions in groups of approximately 12 for 5–6 weeks. This pilot study informed the development of the research questions. This was followed by semi-structured interviews with 20 experienced and practicing forest school leaders who were asked to draw on their years of experience with a variety of groups of children.

The enthusiastic movement of forest school practitioners, many of whom rely on the success of the forest school movement for their livelihoods, are likely to extol its benefits. Many researchers are also engaged in forest school practice – either as practitioners themselves, or through their own children experiencing forest school. It is acknowledged that practitioners involved in research may focus on justifying the value and importance of their practice, which introduces potential bias. Reviews of the literature (Harris 2022; Garden and Downes 2023) indicated that there are very few academic articles which are critical of forest school (e.g. Leather 2013; 2018; Morgan 2018). With regards to this article, and the research which underpins it, the

author is first and foremost an academic researcher, who has trained as a forest school leader, but does not engage in regular work as a forest school practitioner. The body of research reviewed in this article emerges from the more sceptical stance of the researcher, who was wary of broad claims of its overall success for all children.

Prior to the research, the protocol was approved through the University's ethics committee, with further details in each of the previously published articles. Informed consent was obtained verbally from each of the forest school leaders interviewed. The interviews provided rich qualitative data. Analysis was through an inductive approach, using thematic analysis (Braun and Clarke 2006) to identify emerging themes arising from the data. The published articles focus on practitioners' perspectives of the outdoor learning space (Harris 2018); the nature of learning at forest school (Harris 2017); and children's responses to forest school (Harris 2023).

The aim of this article is to take forward and synthesise the findings of the earlier articles to develop a wider understanding of forest school, focussing on children's individual learning journeys, but also proposing a mechanism for its effect on the class of children as a whole. For the benefit of those who have not seen earlier articles, this article will summarise their key points, and then take this forward to develop a deeper understanding of children's learning journeys within forest school.

4. Summary of previous research articles

4.1. The significance of the outdoor learning space at forest school

Harris (2018) addressed the first research question, concerning what aspects of the forest school learning environment support pupils' experiences. It drew on theories concerning learning spaces (Peacock and Pratt 2011) to consider the significance of the outdoor learning space at forest school. Peacock distinguishes between macro and micro contexts of learning spaces. Macro context includes the physical layout of buildings, whereas the micro context considers the positioning of tables and chairs and their implications for pathways for movement; the size of the group and scope for discussion or questioning; the style of learning (child-initiated or teacher led); resources available to support learning; and background noise and distractions. Within the context of forest school, learning spaces were noticeably different from the classroom environment in terms of the physical space, norms and expectations of the children, the affordances offered by natural objects, social dynamics, and the curriculum.

Harris (2018) reported on the findings from interviews with 20 forest school practitioners specifically focussing on their views of what aspects of being outdoors contributed to forest school, with key questions:

- What aspects of the learning space support pupil's experiences of learning at forest school?
- How does the new learning space differ from the classroom environment?
- How does the learning space affect teaching, and the dynamics of learning?

Thematic analysis of practitioners' responses concerning the significance of the outdoor learning space at forest school (Harris 2018) identified several ways in which the environment at forest school offers a different learning space for children (Figure 1).

Physical space	Freedom from the cramped conditions and enclosing walls and ceilings of a classroom
Behavioural space	Freedom to be more active and engage in a wider variety of behaviours; and tolerance of a range of behaviours, noises and movements.
Curriculum	Released from the constraints and demands of the national curriculum

Figure 1. Aspects of the forest school environment.

Practitioners reported that the outdoor learning space is novel, and larger, so reducing the feelings of being confined within a classroom, 'hustled in like a pressure cooker', and giving more space to express themselves. This novel space was also constantly changing with the weather and seasons, and provided a more stimulating and memorable learning environment.

The forest school learning space is a zone with greater tolerance of a range of behaviours which are often suppressed in the classroom: noise, movement (macro and micro, e.g. stimming), and so it is more accommodating of children who struggle to sit still and listen in the classroom. Forest school practitioners felt the space was more relaxed, informal and calming. Each child responds to this in their own unique way. Some may enjoy the chance for greater movement, and to burn off energy. Some may appreciate the opportunity to interact with different children, while others may enjoy the opportunity that more space provides to find peace and even solitude, separate from others who may be noisy, or jostle.

In addition, in many cases, schools see forest school sessions as separate from the time spent focussed on meeting the demands of the national curriculum. So, both children and teachers are released from the demands of the national curriculum, which frees them to engage in more child-initiated or child-led learning. This allows children to follow their interests and curiosity, feeding on intrinsic motivation to learn, rather than extrinsic motivation. It meant leaders could allow children to start where they are at, effectively choosing their own baseline or starting point. Thus, children who have limited experiences of outdoor play and learning may have a different approach (e.g. to den building, balancing on logs, or swings) than those for whom family time is often outside, these activities are not new, and who may instead wish to take these activities to the next level (e.g. higher risk, bigger dens, etc.).

4.2. What do children learn at forest school?

Harris (2017) addressed the second research question, what opportunities for learning are offered in forest school sessions? It explored the range of ways children learn while at forest school. In interviews with practitioners, they were asked to identify

what children were learning, considering not just curriculum topics and bushcraft skills, but also soft skills and how they engaged with nature.

The analysis of interviews identified that while at forest school sessions children learn in a variety of ways. The most common forms of learning mentioned by practitioners were development of relationships with others, and relationships with nature/the forest site. This was closely followed by learning about nature, but forest school practitioners felt this was not the aim of forest school, but incidental, given the location, and children's inquisitiveness. Children did engage with nature (see, touch, feel, and smell) and recognise and name things, and developed a relationship with nature and attachment to the woodland site (see Harris 2021). Deeper analysis (Harris 2021) indicated a process of growing familiarity with nature as they engage, connect with nature at forest school potentially resulting in the development an ethos of care for the environment.

Harris (2017) determined that children learn social skills through turn taking, sharing, and teamwork, and language skills as the range of new activities and experiences increases their vocabulary. Harris (2023) indicated the importance of this for children with English as an additional language, and also for non-verbal children. But even native English speakers may learn new vocabulary inspired by the different environment and experiences.

Children also gain physical skills, resulting from increased movement, opportunities to practice both fine and gross motor skills. They also have opportunities to learn bushcraft skills such as knots, fire lighting, cooking, whittling, den, and shelter building.

Most notably, although forest school practitioners acknowledged that it was possible to teach many parts of the national curriculum while at forest school, few mentioned this. National curriculum topics around environment and science were not explicitly pursued, with only six out of 20 practitioners interviewed mentioning links to the national curriculum.

Forest school was seen as quite separate from classroom teaching, often lead by different people, either practitioners external to the school, or a different member of staff rather than the classroom teacher. This meant that relationships between the children and the leader were not the same as the relationship between the children and their normal teacher. Forest school practitioners saw themselves as facilitators of leaning, rather than teachers, with some debate about the merits of child-led and negotiated learning compared to more directed learning more common in the classroom. Overall, children's personal, social, and emotional development emerged as the key focus of forest school practitioners interviewed in this study, including children's abilities to judge and manage risk.

4.3. How children react to forest school

The third research question, Are there differences in the way children respond to forest school? was addressed in Harris (2023) which explores how children engage with and respond to forest school. Drawing on Dewey's (1938) view on the individuality of experience, and the view that experience is a transaction between the individual and the environment, practitioners were asked how children responded to forest school. The research acknowledged that each child comes to forest school with

their own unique personal circumstances, including experiences of nature, outdoor play, physical and social skills. These shape their 'encounter' (Boniface 2006; Brown 2004) as they try different activities.

At forest school, children are offered a variety of activities. Each child can exercise choice in deciding what activities to do, and engage in their own way, and may learn something different. Some children may find activities within their comfort zone, while other activities may be more of a challenge. The ethos of forest school includes a recognition that children may engage at different levels, with variable ways of addressing a task, and goals. So, children can 'start where they are at' rather than being linked to a particular point in the national curriculum.

Practitioners said they felt all children responded well, but that the experience was different for each child. 'It touches people differently' resulting in individual learning journeys for each child. Further, that the experience and response 'depends on where they are coming from'. Children's responses to forest school sessions depended on whether the learning space is novel and scary, or whether they are familiar, and even confident, in such a setting. The challenges that forest school presents depend on the nature of who is attending. Most will find an element of challenge.

Practitioners believed that forest school offered benefits to all children who attended, however the research identified six specific ways in which it supported children.

Overcoming shyness and increasing confidence

Encouraging communication and talking

Calming anxious children

Supporting improved behaviour and focus

Engaging disaffected learners and school avoiders

Encouraging cultural and social integration.

It was recognised that these benefits were not mutually exclusive, and for some children are in fact interconnected. Overcoming shyness and increasing confidence can then support more communication, and reduce anxiety. For some children, behaviour and focus may be linked to anxiety. Engagement of disaffected learners can then support improved behaviour and focus. Practitioners noted that these benefits were not always immediate, with some suggesting that children reached a turning point after 6 weeks of forest school, while others said it could take longer.

5. Journeys through forest school: a model for understanding diverse educational experiences of children

Together, the three previous publications provide evidence which is now used to develop a theoretical model, grounded in empirical data, which aims to address the final overarching research question of whether, and if so how, this pedagogical approach can be effective across a wide range of children.

Figure 2 brings together and summarises the findings of the 3 articles. The left-hand column, drawing on the findings of Harris (2018) summarises how moving to an outdoor learning environment at forest school offers freedom from the constraints of the classroom, the expectations on behaviour, and the demands of the national curriculum. In this less constrained environment, children experience a range of opportunities for learning (as summarised in Harris 2017), shown in the middle column. Each child may respond in a range of ways, which are outlined in the right-hand column, and in Harris (2023). Drawing these findings together in this article, Figure 2 proposes a theoretical model where each child navigates this framework in their own way, making choices among the options in each column of the model. Thus, forest school offers something for all children, but each take something different from it. Rather than a uniform process, this article proposes that forest school is an arena where children benefit from it in unique ways according to their own needs.

5.1. Individual learning journeys

As stated in the introduction, there is a need understand the 'active way learners make sense of encounters' (Rickinson 2001, p. 283) and 'the individual way in which this occurs' (p. 283). In the proposed model in Figure 2, each child arrives at forest school as a unique individual with their own previous experience of outdoor learning and play (both positive and negative) and set of skills and aptitudes (e.g. climbing trees and building dens), personalities, and educational needs.

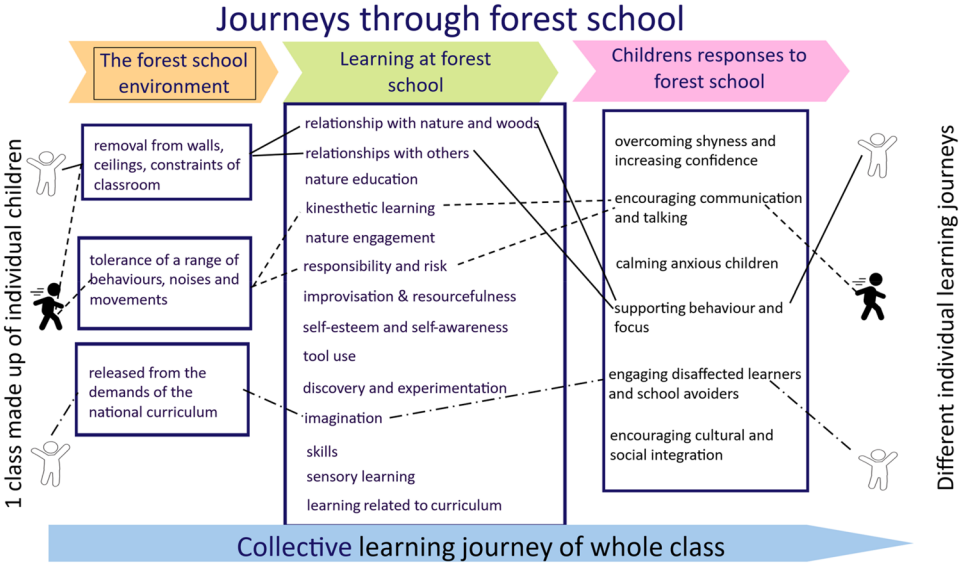

Figure 2. Children's individual learning journeys at forest school. Each child will take advantage of different affordances offered by the outdoor learning environment, chose to engage with different areas of learning while at forest school, and respond in different ways depending on their individual characters and abilities. Lines indicate potential choices made by 3 different children.

The outdoor learning space provides an arena which is new and diverse, providing stimulation, opportunities, affordances, and for some, an arena which is more accommodating to special educational needs. The space may also present challenges in terms of unfamiliarity, weather, wildlife, and plants. Different aspects and affordances of that outdoor learning space will resonate with each child.

A range of activities are offered which offer opportunities for learning (often child-led or child-initiated), which children can engage with from different starting points, and children can choose which they want to pursue, and avoid those with which they do not wish to engage. They can be creative in how they engage with activities and develop tasks towards a range of outcomes. There is no single 'right answer'.

Children respond in their own unique ways, shaped by previous experiences, response to environment and activities offered, and their own strengths and challenges. For some, this may be the development of new skills (whether physical or social). The choice of activities and entry points mean all can engage at some level and feel they have developed/progressed. For children with particular challenges within the classroom (e.g. autism, ADHD, English as an additional language, and lack of self-confidence) they may find the outdoor learning space calmer, more tolerant of their need to move, shout, stim, and more stimulating and varied, inspiring conversation and development of vocabulary. For those who find the classroom setting challenging, the outdoor learning environment and different types of tasks at forest school can be a relief. They may have a greater enthusiasm to attend school.

The triad of the activities, the space, and the child, combine to offer a unique learning experience for each child. The model, developed from the empirical data presented in the three earlier articles, shows the complexity and nuance within the pedagogical approach of forest school.

To exemplify this, the model indicates three possible pathways to illustrate individual learning journeys. While not based on any particular child, they are representative of typical scenarios observed. In pathway 1 (solid line), a child appreciates the forest school environment which provides freedom from the constraints of the classroom, and tolerates a wider range of behaviours. In this environment, the child choses to engage in activities which develop their relationship with nature and the woods (e.g. observing and naming,) and relationships with others (playing together, working together on tasks), and for this child, forest school supports improved behaviour and focus. In pathway 2 (dashed line), once again a child appreciates the forest school environment which is free from the constraints of the classroom and tolerates a range of behaviour, but this child choses to engage in more kinaesthetic learning activities, learning to take risks and also take responsibility for themselves. They engage in more communication and talking as they do these activities. In pathway 3 (dotted and dashed line) a child who enjoys the forest school environment where national curriculum topics and targets are left behind. Instead, they can engage in learning through discovery and experimentation. This disaffected learner, who might have been keen on avoiding school, finds instead that forest school is engaging and choses to attend on those days. These are three possible scenarios but there are many possible

permutations and combinations of reactions to the forest school environment, learning, and responses.

As each child responds to the environment in different ways, and makes their own choices regarding activities and how to engage with them, they each create their own individual and unique learning journey through forest school. The choice and flexibility within forest school sessions enables each to navigate their own way through the opportunities offered for engaging with the outdoor learning spaces, learning, and for personal, social, and emotional development. Thus, forest school is not a process, through which a child passes, producing a uniform product. Instead, it is a form of pedagogy in which each child has a unique experience and development. Thus, although forest school is offered to a whole class, each child experiences individual, and diverse, stories of transformation (Figure 2).

5.2. The collective learning journey

Although the impact of forest school on individual children will vary, the combined impact on the whole class is also worth considering. The overall impact in the classroom will result from the combined impact of the individual learning journeys which collectively may mean that within a group of children, there is better communication, confidence, teamworking and social skills, behaviour, and engagement with learning. Drawing on ideas of emergent properties of systems, it's like a landslide: one can chart the bouncing of individual stones and boulders down slope, but equally one can view the overall sliding of a slope of rocks and earth to a new location. Overall not every stone or boulder bounces in the same way, but the overall effect is of a mass movement. A group of children at forest school each has their own individual learning journey through the opportunities afforded by the outdoor learning space, range of learning opportunities and their own response, but together, the whole class is supported. Thus, in the model, while a class attends forest school, and individual children navigate their own learning journeys, collectively, the whole class benefits.

6. Discussion

Existing research which attempts to theorise forest school practice draws on a range of existing theories. In contrast, this article has taken an inductive approach, building theory based on empirical results. The model presented aligns with aspects of other attempts to develop theories and models to better understand forest school. This study, and Sharma-Brymer et al. (2018) both noted the importance of practitioners in being able to recognise and respond to individual children. Practitioners' are seen as facilitators of learning (Harris 2017). Autonomy and choice are two concepts which underpin the model, and are also key to the work of Coates and Pimlott Wilson (2019) and Barrable and Arvanitis (2019), who considered the relevance of self-determination theory to forest school, and identified autonomy, competence, and relatedness as key factors in forest school. In the model presented in this article, children have a choice, in what activities they choose to do and how to develop those activities. They also have the space

and agency to choose who they will work with, and where they will do activities – whether that be at the centre of a group, or in the periphery, busy, or calm. Similarly, Tiplady and Menter (2021) noted the importance of the learner-led pedagogy of forest school which allowed each child to 'take what they need', or 'start where they are'. Likewise, the research summarised in this article found that sessions in themselves are not linked to the national curriculum and there is no set of learning outcomes to be achieved in order to be 'on target' (Harris 2017). This article, like Sharma-Brymer et al. (2018), argues that forest school is not a programme which uniformly develops all children, but instead the presentation of a conducive environment to all children: each will then respond and develop in their own individual way. A key outcome of this article is that it presents a theoretical model of how this happens.

7. Conclusions

Drawing on the perspectives of forest school practitioners, this article argues that the children's ability to exercise choice, coupled with the child-led ethos, and the more permissive outdoor learning space allow children to engage with and respond to forest school in different ways, according to their own developmental needs. The forest space provides an environment to support personal learning objectives leading to both educational and personal, social, and emotional development at an individual level. The combination of options: activities, starting points, goals, response to outdoor space, etc., means that there is a wide range of possible journeys through forest school, and so also a wide range of possible outcomes. Thus, forest school provides opportunities for children, supported by forest school leaders, to create their own individual learning journeys through forest school sessions and benefit in their own ways. The popularity of the forest school approach is that each of the children in a class can work towards a range of learning outcomes. This can lead to multiple stories of the benefits of forest school, each unique to the child. Furthermore, overall, the whole class benefits, but each in their own way.

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