

'A completely different space': Teachers' perspectives on disadvantage, access to nature and outdoor learning

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Abstract

This study examined teachers' perspectives on how children benefit from time in nature, how disadvantage shapes access and the role of schools in facilitating such access. Drawing on interviews conducted in 2022 with 25 UK primary school teachers who participated in Generation Wild, a nature connection programme for schools in economically disadvantaged areas, the research explored how outdoor learning might support children's wellbeing and recovery in the aftermath of the COVID-19 pandemic. The study identified four themes using reflexive thematic analysis: (1) nature's positive impact on children's wellbeing and behaviour; (2) disadvantage as a persistent barrier to access to nature; (3) nature's role in supporting post-pandemic recovery; and (4) systemic constraints on outdoor teaching. Teachers described natural environments as 'a completely different space' for children, offering calm, freedom and emotional expression, and consider this particularly valuable for those most affected by the impacts of the pandemic. However, they expressed frustration at their limited ability to incorporate outdoor learning in the curriculum, despite recognition of its benefits. Many linked the pandemic to widening inequalities in access to nature and called for more sustained, supported engagement. The results highlight a

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disconnect between teacher values and educational structures and call for systemic change to prioritise nature-based teaching and learning.

KEY WORDS

approaches to teaching, attitudes, inequity and social justice,
Teachers

Key insights

What is the main issue that the paper addresses?

This paper examines teachers' perspectives on how socio-economic disadvantage and post-pandemic pressures shape children's access to nature and how this relates to their beliefs about outdoor learning. It explores the gap between perceived benefits for disadvantaged pupils and what current UK education structures allow teachers to provide.

What are the main insights that the paper provides?

The paper shows that teachers view nature as crucial for children's wellbeing, behaviour and post-pandemic recovery, especially for disadvantaged pupils. It highlights a disconnect between these values and assessment-driven systems, arguing that equitable nature access requires systemic educational change.

INTRODUCTION

Background

Over the past two decades, research has highlighted the important role that natural environments can play in supporting children's health and wellbeing (Chawla, 2020; Ives et al., 2017). Results from this research demonstrate that children can benefit significantly from spending time in nature (Berman et al., 2008; Cameron-Faulkner et al., 2018; Mygind et al., 2021). Louv's *Last Child in the Woods* (Louv, 2008) popularised the idea that children's reduced exposure to nature contributes to a range of physical, psychological and social problems. This work has been highly influential in shaping public and educational discourse around children's outdoor play and learning, and is often cited to support outdoor education programmes and efforts to integrate green spaces into schools. However, it is important to recognise that reduced contact with nature is strongly shaped by cultural and contextual factors, particularly for disadvantaged children (Dickinson, 2013).

Access to nature is not equally distributed. National surveys show that a substantial number of children in England, particularly those from low-income and minority backgrounds, have little or no opportunity to spend time in natural environments (Department for Environment, Food and Rural Affairs, 2018; Hunt et al., 2016). These inequalities were further widened during the COVID-19 pandemic, when restrictions and school closures curtailed children's opportunities to be outdoors, with disproportionate effects on those already

facing disadvantage (Holt & Murray, 2022; Razani et al., 2020). Moreover, there are ongoing concerns regarding children's wellbeing and learning that extend beyond the immediate effects of lockdowns and school closures, with evidence of longer-term impacts on educational progress, social development and mental health (Sharma & Tate, 2023), some of which may be mitigated by improving access to nature, particularly where the pandemic has led to significant nature deficits (Dickson & Grey, 2022).

This study presents results of a qualitative investigation involving UK primary school teachers who participated in Generation Wild, a nature connection programme for schools in economically disadvantaged areas (Stead, 2022, 2023). The programme, designed and run by WWT (the UK nature charity previously known as the Wildfowl and Wetlands Trust) between 2021 and 2024, targeted schools with high levels of economic disadvantage and encouraged children to engage with nature through immersive, hands-on activities. It included fully funded class visits to one of seven WWT wetland centres across the UK, followed by a series of accessible activities designed to extend children's connection with nature beyond the site visit. The study explores teachers' perspectives on how children benefit from time in nature and how disadvantage affects children's access to nature in the wake of the COVID-19 pandemic.

The rest of the introduction provides a review of the evidence on the benefits of time spent in nature for children, disparities in access to natural environments and the role of teachers and schools in facilitating access to nature. As teachers in this study worked in England, Wales and Northern Ireland, there is also a description of how the curricula, assessment and inspection regimes vary between England and devolved nations. It then further examines the impact of the COVID-19 pandemic on children in the UK. The introduction concludes with a description of the aims and scope of the current study and the gaps the study aims to address.

How time in nature benefits children

Children's time in nature is associated with a range of benefits, including but not limited to better cognitive functioning (Berman et al., 2008), positive social and emotional outcomes (Mygind et al., 2021), and increased communication and responsiveness (Cameron-Faulkner et al., 2018). Time in natural environments is also associated with increased physical activity, healthy weight and better general health for children (Kokkonen et al., 2021; Stone & Faulkner, 2014).

Two key psychological approaches which have been proposed to explain the pathways between time in nature and health and wellbeing outcomes are Attention Restoration Theory (ART) and Stress Reduction Theory (SRT). ART suggests that natural environments help restore children's ability to concentrate and reduce mental fatigue by offering gently engaging stimuli, such as leaves rustling or water rippling, that require minimal cognitive effort (R. Kaplan & Kaplan, 1989; S. Kaplan, 1995). In contrast, urban settings demand focused attention, like navigating traffic, which can drain mental resources. In relation to primary school-aged children, Dadvand et al. (2015) report that those with more access to green space at home and school had better working memory and were less inattentive. SRT posits that natural settings support emotional recovery by lowering stress and enhancing positive emotions (Ulrich et al., 1991). Urban environments, in contrast, may hinder this process (Hartig et al., 1991). A meta-analysis by Yao et al. (2021) linked time in nature with improvements in stress, anxiety and physiological health indicators. For children specifically, Wells and Evans (2003) found that access to nearby nature buffered the negative effects of stressful life events on psychological wellbeing. While these approaches offer distinct mechanisms to explain the relationship between time in nature and improved wellbeing, there is

considerable overlap, and the harm reducing and capacity restoring pathways are likely to represent complementary and overlapping processes (Markevych et al., 2017).

The nature connectedness approach, as taken by the Generation Wild programme (described in more detail below), offers valuable additional insights alongside the two psychological models of nature's restorative effects. Nature connectedness is a psychological construct that describes the perceived closeness or sense of oneness between an individual and the non-human natural world (Mayer & Frantz, 2004). Human–nature connection can be understood through Wilson's biophilia hypothesis, which holds that humans have an innate affinity to living things and a tendency to seek connections with nature (Wilson, 1984). Nature connectedness is considered conceptually distinct from contact with nature, environmental knowledge, or pro-environmental behaviours (Whitburn et al., 2020). In adults, higher levels of nature connection are positively associated with wellbeing (Pritchard et al., 2020) and greater engagement in pro-environmental behaviours (Evans et al., 2018). A recent review found similar positive associations between nature connectedness and wellbeing in children (Arola et al., 2023). Given its potential to support both wellbeing and broader developmental benefits, fostering nature connectedness is increasingly regarded as a valuable goal for environmental education interventions (Barrable, 2019). A number of studies have found that pupils who participate in outdoor learning have higher achievement across a range of subjects including reading, maths and science (Becker et al., 2017; Bølling et al., 2018; Fiennes et al., 2015; Harris, 2023). Research has also shown that outdoor learning was associated with increased engagement with school for primary-aged children in Wales (Marchant et al., 2019). Other positive educational outcomes are improved second language acquisition (Myhre & Fiskum, 2021), improved attendance, skills and grades (Ruiz-Gallardo et al., 2013), and increased intrinsic motivation (Bølling et al., 2018).

Inequalities in access to nature

Given the benefits of spending time in nature, it is important to understand how disadvantage may impact both children's access to nature and the benefits they derive from it. The equigenesis hypothesis (Mitchell & Popham, 2008) proposes that neighbourhood greenspace can mitigate socio-economic inequalities in health and wellbeing. In a systematic review of 90 studies, Rigolon et al. (2021) found evidence supporting a greater beneficial effect of nature on health for individuals from low socio-economic backgrounds, suggesting that greenspace could serve as a key tool in addressing health disparities.

While the benefits of nature for children are well established, access to these opportunities is shaped by a range of social, economic and environmental factors. National monitoring data indicate that around one in nine children in England had not visited a natural environment in the previous year, with children from low-income households and minority ethnic backgrounds disproportionately affected (Hunt et al., 2016). Such disparities reflect broader structural inequalities: for example, neighbourhoods in the most affluent areas have far more parks and greenspaces than those in the most deprived, and low-income and minority households roughly being less likely to have access to a private garden (Thompson et al., 2010; Zylva et al., 2020). Beyond physical infrastructure, a range of complex social and economic factors influence children's access to greenspace, such as transport costs and availability. Waite et al. (2023) identified less well-understood barriers, including limited awareness of what young people value, fear of the unknown, lack of representation and the failure to acknowledge diverse cultural norms. Similarly, Smith and Pitt (2022) emphasise the lack of representation of minoritised ethnic groups in natural spaces, while Zaidi and Pitt (2022) highlight language as a barrier to family visits, particularly in cultures where extended, multigenerational socialising is the norm; while children may speak fluent English, older relatives often do not.

The role of outdoor teaching and learning in facilitating children's access to nature

Schools and teachers have significant potential to equitably increase children's access to greenspace for both play and learning (Bates et al., 2018; Bikomeye et al., 2021), as they are the primary setting where children spend most of their weekday hours for much of the year (Moore & Marcus, 2008; Mullan, 2019). Primary schools are well placed to support regular contact with outdoor environments and to foster nature connectedness (Barrable, 2019; Ives et al., 2017; Lankenau, 2018). Reviews of outdoor learning have shown that when pupils are taught outside, they can benefit academically, socially and emotionally (Mann et al., 2022). However, as Dillon and Lovell (2022) highlight, children from poorer families and ethnic minorities are less likely to have the opportunity to engage in learning in natural environments, potentially widening inequalities.

The UK government's 25-Year Environment Plan (Department for Environment, Food and Rural Affairs, 2018) recognises school grounds as valuable sites for children's nature experiences, with the potential to improve equity in greenspace access. Despite this, outdoor teaching and learning in UK schools have declined in recent decades (Prince, 2019), and many teachers continue to report substantial barriers. A growing body of research has examined the enablers and obstacles to outdoor learning (Harris, 2023; Oberle et al., 2021; Patchen et al., 2024; van Dijk-Wesselius et al., 2020), often with variations across countries, education systems and historical contexts. Although the potential of schools, especially primary schools, to provide regular, equitable nature experiences is increasingly acknowledged, nature-based learning remains underused in UK education (Marchant et al., 2019). Expanding support for outdoor education could therefore play an important role in reducing disparities in children's access to nature.

How the differences between UK education systems may shape outdoor learning practice

Education in the United Kingdom is the responsibility of devolved nations, and there are significant differences between the education systems in England, Wales and Northern Ireland. In England, outdoor learning is a statutory requirement of the Early Years Foundation Stage, which sets standards for care and learning for children from birth to 5 years. However, there is no mandatory requirement for outdoor learning in the English primary national curriculum (Department for Education, 2013). The new Welsh curriculum (Welsh Government, 2022), however, is centred on four purposes, or broad statements about who learners should become. Two of these purposes, becoming '*ethical informed citizens of Wales and the world*' and '*healthy confident individuals*', are particularly closely aligned with outdoor and nature-based learning. In Northern Ireland, outdoor learning is mandated during the Foundation phase (4–6 years) but not throughout the remaining years of the primary curriculum (CCEA, 2025).

Beyond curriculum differences, UK nations also vary in pupil assessment systems and external inspection regimes. In England, standardised testing plays a central role in assessing both pupils and schools. Primary school children take Standardised Assessment Tests (SATS) in Year 2 and Year 6, with results published for benchmarking and scrutinised as part of Ofsted inspections. There are additional mandatory national assessments in England for children in Reception, Year 1 and Year 4. In contrast, primary-aged children in the devolved nations do not take SATs, relying instead on ongoing teacher assessment systems.

Recent research highlights how the expectations of England's assessment and accountability driven education system may limit teachers' capacity to deliver outdoor learning.

Teachers face increasing 'time poverty' that limits their capacity for personal development and their ability to engage with innovative and creative teaching methods (Creagh et al., 2025). This is echoed by national workforce data revealing that nearly half of teachers judge their workload to be unmanageable and that high workload continues to constrain teachers' capacity to utilise more time intensive pedagogies such as outdoor learning (Taylor & Pillinger, 2025). Preparing for Ofsted inspections generates significant additional workload and stress, contributing to reduced teacher autonomy and limiting the uptake of practices such as outdoor learning which are not directly assessed (Perryman et al., 2025). Prince and Diggory (2024) analysed Ofsted English school inspection reports. They found that only 42% of inspection reports mentioned outdoor learning and in 72% of these cases outdoor learning was mentioned only in respect to the Early Years Foundation Stage, suggesting it was peripheral to inspection priorities and therefore not a priority in school leaders' planning. The State of Play Report (Firth & Powell, 2025) found that key stage 1 children (aged 5–7 years) in England had only 71 min outdoor playtime on average each day compared with 94 min for their counterparts in 1995; for key stage 2 children outdoor play had been reduced from 83 to 65 min each day. An issue of particular concern was that schools with a higher proportion of children in receipt of Free School Meals have shorter breaktimes. Collectively, these pressures mean that children in English primary schools may currently have few opportunities for outdoor play and learning.

The impact of the COVID-19 pandemic on UK children

The COVID-19 pandemic has been described as a major disruptive event, substantially affecting children's education (Brigandi et al., 2022), wellbeing (Sarvan & Muslu, 2022) and health (Haleemunnissa et al., 2021). In March 2020, UK schools closed to most pupils, except for children of key workers and those deemed vulnerable, for an indefinite period. While primary schools partially reopened in June and July 2020, the majority of pupils did not return until September. The following months were heavily disrupted by recurring staff and pupil absences due to isolation requirements following contact with confirmed COVID-19 cases. A second full national lockdown from January to March 2021 saw schools once again closed to most children. Although schools reopened to all pupils from March 2021 onwards, the remainder of the school year continued to be significantly affected by high levels of staff and pupil absences (Holt & Murray, 2022).

There is no doubt that the effects of lockdown policies and school closures were profound, affecting children's educational attainment (Kim & Asbury, 2020), child mental health and wellbeing (Mazrekaj & De Witte, 2024), parental wellbeing (Skripkauskaitė et al., 2023) and adverse effects on teachers' mental health and wellbeing (Oxley et al., 2024). During this time, children's opportunities to spend time outdoors were unequally affected, with existing disparities exacerbated (Quay et al., 2020). According to the Institute for Outdoor Learning (2022), outdoor learning provision was reduced in 80% of schools (Institute for Outdoor Learning, 2022). However, there is a lack of data measuring whether outdoor learning has subsequently returned to pre-pandemic levels. Greer et al. (2023) report an incidental finding that only 23% of primary school teachers and 19% of secondary school teachers in England ever teach outdoors (Greer et al., 2023). However, as this was an opportunity sample responding to a survey on climate change and sustainability and likely to be biased towards individuals who are already engaged with teaching about these issues, they suggest that true rates of outdoor learning may well be lower still.

Research aims and scope

Within this context, it is important to understand how outdoor teaching and learning can help reduce the nature access gap experienced by disadvantaged children, an inequality that became more pronounced following the COVID-19 pandemic. This study focused on the perceptions and experiences of UK primary school teachers who participated in Generation Wild, a nature connection programme targeted at schools with high levels of economic disadvantage (Stead, 2022, 2023). Given the significant time they spend with children, teachers are uniquely positioned to observe the effects of limited nature exposure and to assess how increased access to nature may support children's recovery and wellbeing (Fägerstam, 2012; Marsh & Blackwell, 2025).

The study was designed to explore teachers' perceptions and experiences of the nature connection programme. It is important to note that the study took place in 2022, during a period when UK education continued to face significant disruption due to COVID-19-related staff and pupil absences. Early interviews revealed that participants frequently—and without prompting by the interviewer—raised the impacts of the COVID-19 pandemic, often making explicit links between lockdowns, disadvantage, access to nature and children's wellbeing. In response, the interview schedule was amended for subsequent interviews to include specific questions about the perceived impact of the pandemic.

The study therefore sought to address the following research questions:

1. What are teachers' perceptions and experiences of how children benefit from time in nature?
2. What are teachers' perceptions and experiences of how disadvantage affects children's access to nature?
3. What are teachers' perceptions and experiences of how outdoor teaching can help address inequalities in access to nature?
4. What are the barriers to outdoor teaching experienced by UK primary school teachers?

METHODS

The generation wild programme

Generation Wild is a programme designed and delivered by the Wildfowl and Wetland Trust (WWT), a UK nature charity that aims to increase primary school children's nature connection and wellbeing (Stead, 2022, 2023). Generation Wild is specifically targeted at schools with relatively high levels of economic disadvantage as indicated by the percentage of children eligible for free school meals. Geographically, participating schools are clustered around seven WWT wetlands centres in England, South Wales and Northern Ireland.

Generation Wild offers participating schools a fully funded class visit to one of the centres, with transport costs covered, followed by access to an online platform containing more than 50 nature connection activities. The programme is designed to promote nature connection rather than knowledge acquisition and aims to involve both families and schools over a longer period beyond the site visit. The wetland visit combines drama and technology to provide an immersive experience, with children completing a range of hands-on activities, such as building a nest or listening for bird calls. After their wetland trip, pupils are asked to complete at least 10 activities and record them on the website to earn a badge and certificate. These post-visit activities are intended to be inclusive and accessible, requiring no specialist equipment or prior knowledge and can be carried out in any safe local green space. The Generation Wild programme relies on ongoing teacher involvement to set up pupils on the

website, allocate class time for activities and provide support and encouragement for children completing activities at home. Therefore, ensuring meaningful engagement beyond the initial wetlands visit requires an understanding of teachers' perspectives.

Participants and recruitment

Between January and June 2022, all teachers who led a visit in Generation Wild (approximately 200) were invited to take part in an interview around 6 weeks after their wetlands visit. Between January and July 2022, interviews were conducted with a selected sample of 25 teachers. All the participants taught in state primary schools across England, Wales and Northern Ireland, with a relatively high proportion of children eligible for free school meals. Three-quarters (75%) of the teachers identified as female, and 12.5% as belonging to a minority ethnic group, which is broadly in line with the UK teaching workforce (Department for Education, 2022). They ranged from newly qualified teachers to staff approaching retirement with over 30 years of experience. The characteristics of the 25 teachers are provided in [Table 1](#).

This research followed British Psychological Society (BPS) ethical guidelines. Ethical approval was provided by the School of Psychology Research Ethics Committee of Cardiff University, reference number EC21.12.14.6488. Fully informed consent was obtained in advance of all interviews, with particular attention paid to information regarding anonymity, confidentiality, data protection and storage, and the right to withdraw. At the start of each interview, a final check was made for verbal assent before recording began. Any identifying information, such as names of people, schools or places, was redacted during transcription, and in the remainder of this paper, numbers are used to refer to individual participants. As a token of appreciation, participants were offered a family ticket for a wetlands centre visit, valued at approximately £40.

Materials and procedures

A semi-structured interview guide was devised, with questions generated from observations of Generation Wild wetlands visits, conversations with teachers during those visits and discussions with the WWT on-site staff. The main topics covered in the interviews were: contextual information about the participant and their school; perceived benefits of nature for children; barriers to outdoor teaching and learning; and effects of disadvantage. Early interviews highlighted how COVID-19 impacts were important to participants. In response, the interview schedule was amended from participant 5 onwards to incorporate questions about the impacts of the pandemic. While participants were specifically recruited following participation in Generation Wild, teachers spoke about experiences of nature and outdoor learning more generally, not only their experiences of the programme.

Interviews were conducted remotely via video call using either Zoom or Teams, with only the audio recorded. Interview lengths ranged from 13 to 47 min. Each recording was orthographically transcribed in accordance with guidelines (Willig, 2013). Punctuation was added to enhance readability, including quotation marks for instances of directly reported speech. To improve clarity, repeated discourse markers such as 'like', 'you know' and 'sort of' were removed, while regional dialect, slang and grammar were left unchanged. Due to poor sound quality, three interviews could not be fully transcribed. As a result, the final dataset comprised 22 transcribed interviews totalling over 100,000 words, along with partial notes from the remaining three interviews.

TABLE 1 Teacher characteristics.

ID	Gender	Ethnicity	Teaching experience	School type	Region
P1	F	White British	10+ years	Mainstream primary	SWE
P2	F	White British	3	Mainstream primary	SWE
P3	F	White British	10+	Mainstream primary	NWE
P4	M	White British	10+	Mainstream primary	NWE
P5	F	White British	10+	Mainstream primary	NEE
P6	F	White British	10+	Mainstream primary	NWE
P7	M	White British	10+	Special school	NEE
P8	F	White British	2	Mainstream primary	NWE
P9	F	White British	10+	Mainstream primary	NWE
P10	F	Asian	5+	Mainstream primary	Wales
P11	F	White British	5+	Mainstream primary	SWE
P12	F	White British	20+	Additional learning needs	Wales
P13	M	White British	5+	Mainstream primary	NWE
P14	M	White British	10+	Pupil referral unit	Wales
P15	F	White British	5+	Mainstream primary	NWE
P16	M	White British	<1	Mainstream primary	London
P17	F	White British	10+	Special school	SWE
P18	M	White British	20+	Mainstream primary	Wales
P19	F	White British	20+	Mainstream primary	NWE
P20	F	Black British	10+	Mainstream primary	London
P21	F	Indian	<1	Mainstream primary	London
P22	F	White British	5+	Mainstream primary	NWE
P23	F	White British	20+	Mainstream primary	NWE
P24	F	White British	10+	Mainstream primary	London
P25	M	White Irish	10+	Mainstream primary	NI

Abbreviations: F, female; M, male; NEE, North-East England; NI, Northern Ireland; NWE, North-West England; SWE, South-West England.

Data analysis

Reflexive thematic analysis (Braun & Clarke, 2006, 2021) was chosen as the most suitable method for this study. Reflexive thematic analysis operates within a qualitative paradigm, typically using inductive coding by a single coder, with researcher subjectivity seen as integral to the analysis process. Analysis followed the six-phase process outlined by Braun and Clarke (2021): familiarisation with the dataset; coding; generating initial themes; developing and reviewing themes; refining themes; and writing up. All interviews were conducted and transcribed by the first author, enabling data familiarisation to begin early in the research process. Transcripts were systematically coded line by line, using pen on paper, taking an inductive 'bottom-up' approach, with codes generated from the data. As an aid to reflexivity, the co-authors read and independently coded a number of interviews. Once all interviews were coded, candidate themes were generated through grouping codes into patterns of meaning. This process was inductive, driven by the data rather than by theory. The first author taught in early years and primary education settings in England for 15 years; other

authors did not have a background in education. This process led to the identification of four distinct themes that are discussed in detail below.

RESULTS

The four themes identified through the thematic analysis map closely onto the study's research questions. The first theme (Theme 1) explores the beneficial effects of nature on children's behaviour and wellbeing. The second theme (Theme 2) covers how disadvantage limits children's access to nature and the ways in which teachers strive to counteract these barriers. The third theme (Theme 3) considers nature's role in supporting children's recovery from the ongoing and unequal impacts of the COVID-19 pandemic. Finally, Theme 4 highlights the systemic constraints that often prevent teachers from incorporating outdoor learning, despite their desire to do so. Each theme is illustrated with verbatim extracts from the interviews, providing insight into teachers' perspectives and experiences.

Theme 1: The beneficial effects of nature on children's behaviour and wellbeing

The first theme describes teachers' general beliefs that spending time in natural environments has positive effects for children's behaviour and wellbeing. Time in nature was seen as particularly beneficial for children who struggled with the demands of the classroom. As teacher P11 commented:

You see a different side of them... those children that can't sit in their chair, they struggle sitting there listening... those constraints of being in a classroom, having to sit quietly... that's a lot for some children.

(P11)

P9 described how a colleague, initially reluctant to take part in Generation Wild, later acknowledged the impact on children's behaviour, but also that the benefits of being in nature were fleeting, with behaviour reverting once back indoors:

He said the behaviour difference was incredible... they were just completely different children outside... they were more calm, a lot more relaxed, they got on a lot better with each other... the minute that they came back into class, they just changed again!

(P9)

Teacher P2 described how the outdoor environment helped children in their class to calm down:

For younger children, when they're in the classroom... there's a lot going on... outside they've got more space... being outside just makes them a bit more calm.

(P2)

Previous studies evaluating nature-based learning have found fewer social, emotional and behavioural difficulties (Richardson et al., 2017). Teacher P4 explained how for one of

his pupils, time in nature provided an opportunity to express feelings in support of better social and emotional wellbeing:

He had some of the most severe behavioural difficulties I've ever seen, but he would sit and build this bug hotel beautifully, and even make little beds to put in it, in case they wanted to go to sleep... so for a child who's incredibly difficult, and doesn't show emotions... well, he's showing a lot of empathy!

(P4)

Teachers also gave many examples of how they believed time in nature could help children to heal and recover from traumatic events in their own lives. P5 was particularly emphatic about her belief that the natural environment could be life-changing for the children she taught:

I take me iPad out next week, and I videoed their voices, and when I came in, that teacher cried. She'd never heard this little girl's voice! Now that little girl, currently sits in school and puts her hand up in class and asks questions. That's how much it works! It's magic!

(P5).

This extract is comparable to the account of an elective mute child 'talking to the trees' described by a teacher participant in Marsh and Blackwell (2025). Overall, the idea that time in nature can have a meaningful impact on children's wellbeing was echoed by many other teachers. This teacher emphasised the ways she found to help the children in her Additional Learning Needs unit:

There's so many opportunities to develop resilience... the children we work with, they may be going through trauma... they may have huge fears about things... but when you see them outdoors, and they have the opportunity to lift up a stone and find a worm, and then you say, 'Wow... you're brave, you're picking it up!' It gives them that confidence, that self-esteem.

(P12)

Theme 2: Disadvantage as a barrier to accessing nature

The second theme describes how teachers understand disadvantage as a lack of opportunities and experiences, including access to nature. Disadvantage was most often described in terms of poverty, probably because access to Generation Wild is based on the proportion of children in a school eligible for free school meals. Teachers understood the complexity of financial barriers affecting access to nature. As teacher P22 commented:

People are working in very low paid jobs, or have caring responsibilities, and these things are all impacting on their ability to actually go and see places.
(P22)

The same teacher further explained how poor weather could act as a barrier to spending time outdoors in nature, especially when children lacked suitable clothing and footwear

To say, 'Oh, [nature is] free!' is kind of... it's not that simplistic really... it's... you might not even have the suitable shoes to walk that distance, or a warm enough coat? (P22)

Previous research has shown that not having suitable clothing or footwear for poor weather is a barrier in school time (Harris, 2023). Collier (2019) explains how values around clean and new-looking clothes may vary between social groups. For urbanised families who have experienced poverty in recent generations, this may mean avoiding visits to certain types of outdoor space to prevent clothes and footwear becoming dirty and muddy.

Beyond financial disadvantage, teachers described how a range of social factors, including parental mental health challenges, housing instability and language barriers, constrained families' capabilities to support children's access to nature. For example:

A lot of our parents, because of their learning difficulties, what they can actually offer as parents is so limited... a lot of them are very anxious.

(P12)

We will often get new starters for a few weeks, and then they'll be moved on... new refugees might be here for three to six weeks, before being rehoused in another area, so we've got quite a lot of coming and going at our school...

(P16)

Teachers recognised that access to safe, local green space was unequally distributed, with issues such as criminal and antisocial behaviour often rendering public spaces inaccessible or unsafe for children

A lot of our children aren't allowed to play out in [REDACTED] Park because of gang crime and violence... the play areas have been burned out... there are quite a few significant challenges that face the community around us.

(P15)

While many socio-economic barriers intersect with race to disproportionately disadvantage minority ethnic communities, some teachers also described overt racism as an additional and distinct barrier to nature access, particularly in public green spaces

A lot of our Asian families don't use the local park because of racist incidents... and they maybe don't have gardens, or live in flats, so aren't able to access the nature activities quite as easily...

(P22)

Teachers spoke about how the children they taught had fewer opportunities than those living in more affluent communities and gave examples illustrating how this lack of direct experiences and knowledge can impair children's ability to access the curriculum

A couple of years ago, I was teaching mountains as a topic, and I said, 'You know, when you go to the top of a hill, and you look down... when you look over the top?' It was absolute blank faces... it was that moment I realised that these children had never actually experienced that.

(P21)

Teachers saw spending time in natural places, such as the WWT wetlands sites, as beneficial for all children, but particularly so for those who had not had similar experiences before

Their faces when they first saw the big lake through the hides... it is just being in a completely different space for them... because they've not seen anything like that before... and they could hear noises.

(P19)

Many teachers believed that even a single wetlands visit could make a genuine difference to disadvantaged children, helping them to understand the world around them

It was allowing the children that opportunity to go out into the world and go into an open space... and see animals and creatures that they've never seen before, in their natural habitat... most of them live in a high-rise block, so a bird flying past is going to be limited as to what they can see of that animal. (P4)

Theme 3: Nature's role in children's recovery from the COVID-19 pandemic

The third theme addresses nature as a force for children's recovery from the continuing and unequal impact of the COVID-19 pandemic. Teachers described the impact of lockdowns and school closures in terms of missed opportunities, changes in time spent outdoors, loss of physical fitness and low wellbeing. A key strand of meaning running through the data, and connecting this with the other themes, was the sense that the impact had not been equal. Disadvantaged children and families had tended to be more severely affected, thus widening the inequalities described in the second theme

COVID has had a massive impact on some children... Some of the children in my class, they very much just stayed at home, did not go out, watching screens for hours and hours. I don't want to say all children, because... I think it's very family dependent.

(P24)

Many teachers mentioned that the wetlands visit was the first school trip their class had been on since the pandemic. There was a sense that children had missed out on important milestones and opportunities

It was the first time that we've been anywhere since COVID, so a lot of these children haven't been anywhere for a very long time.... I found it very emotional to be honest, just seeing them enjoying themselves, being with each other, being outside. (P9)

Although teachers welcomed this return to normality, they acknowledged that it brought anxiety for some parents and children

For the first time ever, I had parents say to me, "I'm really worried about them going on the coach... going out for the day." The parents try not to show it to their children, but they naturally pick up on things and worry themselves.

(P19)

For some families, in areas with good local access to green space, lockdowns were a time when outdoor activity and time in nature flourished. However, for others who lived in more densely populated urban areas with poor access to green space locally, time spent outdoors decreased

It's a mixed picture... you've got the families who got out more than they did normally outdoors... you've got the families who just couldn't be bothered, to be honest... and there was a fearful group as well... because COVID was fearful, we forgot how fearful it was.

(P18)

Teachers saw time in nature as a force for recovery during a period of returning normality. There has been little published research to date that explicitly links the benefits of outdoor learning for children's wellbeing in relation to the consequences of COVID-19 lockdowns on children's wellbeing and development. P24 described how she used the nature connection activities from Generation Wild to encourage her class to co-operate when they were struggling with social and emotional aspects of learning after missing out on significant portions of their early years education:

I did it as a personal social emotional thing about working together, they all made bug hotels.... working as a team, working collaboratively... they needed a lot of help and support with that.

(P24)

This theme is summed up in this extract from P4 who spoke joyfully of the experience of taking his class to the wetland:

We were out in the open, we were out with animals... and we were given that opportunity to be free again... we weren't caged into the houses or the school, we were walking around, we were in the fresh air, and we were living our best life at that moment in time. (P4)

Overall, teachers were acutely aware of the impact of lockdowns and isolation on the children in their classes, and saw spending time in natural places as restorative, part of a process of emotional and physical recovery and regaining lost freedom.

Theme 4: Systemic constraints to incorporating outdoor learning into the curriculum

The final theme contrasts sharply with the previous three. Despite the teachers expressing how they valued time in nature for their disadvantaged pupils, it was clear that many felt unable to spend much time on Generation Wild activities after their site visit and were seldom able to teach outdoors. This theme describes how most teachers would like to teach outdoors more frequently but often feel unable to do so because of the structural constraints within which they work.

There were also some issues more specific to this sample, relating to English education policies or due to high levels of poverty in local communities. A sense of overwhelm experienced by many is clearly conveyed by this teacher:

It's the pressures of SATS, it's the pressures of the local authority, the pressures of the government... that you have to get through your curriculum, and you have to get these children at certain percentages, and so I think that's really a bit of a hindrance to [...] going outside. (P9)

There was a real sense of conflict between teachers' beliefs that children would benefit from time in nature and the amount of time they felt able to spend on this. Many schools prioritise teaching core subjects to the exclusion of outdoor learning, as this participant described:

There's just no time in the timetable. Even though every single teacher here would love to be doing more field work, more outdoor learning, it's just not a priority... the priority is, of course, the core subjects, English, maths, etc... because that's what we're judged on.

(P20)

Teachers also alluded to concerns over the need to evidence progress in every lesson.

Working in a school setting, there's always a thing, "Oh, we've got to see progression!"

(P13)

While the Ofsted inspection framework does not define what constitutes evidence of progress, teachers described how at a local level this could be interpreted as the need for written evidence in books for each child for every lesson

They're always talking about evidence evidence evidence in your learning. I think my school probably don't want us to learn outdoors, because they'd be worried about how we can prove the quality of learning to Ofsted. (P6)

Teachers expressed concern that Ofsted inspectors did not value or pay much attention to outdoor learning—perhaps because of its absence from the English primary national curriculum. One relatively inexperienced teacher related remarks by their colleagues that:

Nobody has said that Ofsted have ever gone outside to look at learning... someone said they were teaching a lesson outside and the inspector just looked through the window and watched them... so they couldn't actually hear! (P8)

This was one area where there was marked variation within the data, but this seemed to reflect differences between the countries within the United Kingdom. Although participant numbers were small in the current study, there were contrasts between the views expressed by teachers in England and Wales. While many teachers in England explicitly described the English national curriculum as a barrier to outdoor learning, the Welsh participants in this study spoke far more positively of the new Curriculum for Wales (Welsh Government, 2022):

Health and wellbeing is one of the six areas of learning, of course it's statutory [...] in a sense, we can design our own curriculum, that's the flexibility it has at the moment. Health and wellbeing was never on the curriculum before, but because it's there now, we've got to look for more opportunities to do that, so I think the new curriculum will help.

(P18)

Although the majority of teachers working in English schools recognised the benefits of outdoor learning for children, they perceived systemic pressures of the national curriculum, standardised testing and Ofsted inspections as substantial constraints to outdoor learning. In contrast, the Welsh teacher participants saw their new curriculum as more accommodating of outdoor learning, and did not express concern over inspections or assessment regimes.

DISCUSSION

Summary of results

This study provides insight into teachers' perspectives on the barriers disadvantaged children face in accessing nature, and how these inequalities have been deepened by the impacts of the COVID-19 pandemic. All the teachers in this study worked in UK primary schools, teaching children aged 4–11 years. The four themes reflect how teachers perceive the intersecting effects of socio-economic disadvantage, restricted nature access and structural limitations within the education system. Theme 1 highlighted teachers' observations of the positive effects of time in nature on children's wellbeing, behaviour and emotional expression. Theme 2 focused on the multiple, intersecting economic, social and environmental barriers that limit disadvantaged families' opportunities to engage with natural spaces. Theme 3 addressed the uneven impacts of the pandemic and how teachers viewed nature as a valuable tool in children's emotional and social recovery. Theme 4 revealed a deep frustration among teachers, who recognised the benefits of outdoor learning but felt constrained by systemic pressures that deprioritise it in practice.

Together, these themes illustrate the gap between what teachers believe is beneficial for their pupils and what they feel able to provide within current educational structures. It shows that teachers experienced considerable conflict over the disconnect between their beliefs and professional practice, that is, their strongly held view that time in nature is valuable for disadvantaged children, and their perceived inability to provide these experiences consistently due to structural constraints. This conflict, shaped by pressures such as standardised testing and curriculum overload, has important implications for the success of nature connection programmes such as Generation Wild, which rely on teacher agency for implementation.

Interpretation and connections with the wider literature

The finding that children behave 'better' outdoors echoes other studies that have reported perceived improvements in children's behaviour during outdoor learning. Scott and colleagues describe how many teachers saw children's behaviour as a barrier to getting outside and feared losing control of their class (Scott et al., 2013). However, once outside many reported improvements to children's behaviour. In addition, studies evaluating nature-based learning have found increased self-efficacy (Chawla et al., 2014), significant and sustained improvements in pupil wellbeing (Harvey et al., 2020), and a reduction in social, emotional and behavioural difficulties (Richardson et al., 2017). These findings support the widespread teacher perception that nature has an immediate and observable impact on children's mental state and social interaction.

While it was rare for teachers in this study to explicitly reference psychological theories, many of the extracts quoted in this theme use language such as calm, space and freedom, which closely aligns with theoretical pathways between nature experiences and wellbeing

outcomes. Specifically, the findings are in line with SRT (Ulrich et al., 1991), in that exposure to natural environments can promote recovery and healing by increasing positive emotions and reducing arousal and negative affect. There is also evidence in participants' accounts that the reduced cognitive load and stimulation outdoors could counter the effects of mental fatigue and improve cognitive functioning, in line with ART (Kaplan, 1995; Kaplan & Kaplan, 1989). These interpretations are supported by teachers' accounts of children appearing more focused, less reactive and more emotionally expressive when in nature.

Teachers were acutely aware of the many ways in which absolute and relative poverty restricted children's ability to access natural spaces. Examples included parents' long working hours, irregular shift patterns, lack of suitable outdoor clothing and limited access to transport. Previous research has also shown that poor-quality or insufficient clothing is a barrier to outdoor experiences both in and outside school. Collier (2019) explains how values around keeping clothes clean or avoiding mud may reflect different cultural norms within communities facing economic disadvantage. For some urbanised families who have experienced generational poverty, avoiding certain types of outdoor activity may serve a protective function, particularly when compounded by financial hardship. These findings suggest that disadvantage limits children's capabilities, that is, their real and practical opportunities, to experience nature. The Capability Approach (Sen, 1993) highlights that equity must consider not just theoretical access but also the ability to convert opportunities into actual experiences (Domínguez-Serrano & del Moral-Espín, 2022). In this case, teachers observed that even free or local nature experiences were often inaccessible due to social, cultural and material constraints. Many teachers recognised the importance of using 'poverty-proofing' strategies to reduce the stigma of not having appropriate clothing and ensure trips and outdoor activities within school are genuinely accessible to all children (Mazzoli Smith & Todd, 2019).

While many socio-economic barriers may interact with race in intersectional ways to disproportionately disadvantage minority ethnic communities, there were also explicit mentions of the effects of overt racist behaviour. There is evidence in the literature suggesting that some minority ethnic families may avoid accessing public spaces such as parks due to fear of racism. Cronin-de-Chavez et al. (2019) found that fear of crime and antisocial behaviour was a barrier to park usage for low-income minority ethnic families in a northern English city. Other research highlights the lack of cultural representation in natural spaces (Smith & Pitt, 2022) and how language and multigenerational family dynamics can further limit access (Zaidi & Pitt, 2022). In this study, teachers reported that some families faced multiple tangible and less tangible barriers, including cultural unfamiliarity, fear of social exclusion and unsafe or poorly maintained local environments.

Teachers highlighted how the pandemic had disrupted children's wellbeing, fitness and social development, with disadvantaged pupils experiencing the greatest challenges. This fits with evidence from other studies of differential impact on children's time spent outdoors, and that lockdown impact was greater for disadvantaged groups (Natural England, 2020). Bingham et al. (2021) reported drastic reductions in children's physical activity during the first UK lockdown, with children of Pakistani Heritage and other minority ethnic groups more severely impacted than white British children, while Skripkauskaitė et al. (2023) found the impact on parental mental health during periods of lockdown restrictions was most pronounced for single parents, parents of primary school-aged children and parents of children with SEND. Meissel et al. (2025) emphasise that although many children had positive experiences of home schooling during lockdowns, this was not universal, and there were differences across sociodemographic groups.

The findings on the unequal impact of the pandemic on children's time spent outdoors align with Friedman et al. (2022), who found that although many parents reported an increase in their child's connection to nature during the COVID-19 pandemic, both lower

socio-economic status and eligibility for pupil premium were associated with a decline in nature connection. Importantly, they also reported that children whose connection to nature decreased were more likely to exhibit elevated emotional and behavioural difficulties, with children from less affluent households disproportionately represented in this group. However, the results go beyond simply describing the pandemic's impact. It highlights how teachers perceived nature as an essential part of children's recovery from lockdown-related disruption and distress. This is consistent with the findings of Marsh and Blackwell (2025), who reported that disadvantaged pupils were the most adversely affected during lockdown, and that outdoor learning was increasingly being deployed by schools as a pedagogical tool to improve wellbeing, behaviour, social skills and academic attainment in the post-pandemic period.

Given that children's nature experiences in school depend on teachers' facilitation, the results point to a particularly important and under-explored dynamic: the conflict between teachers' values and the constraints of their working environment. The findings reveal that although teachers strongly believed in the benefits of outdoor learning, particularly for disadvantaged pupils recovering from the effects of the pandemic, they often felt unable to deliver it meaningfully due to systemic pressures. Previous research in other areas of education has shown that teachers may experience internal conflicts between their own pedagogical beliefs and the practice imposed on them by school or national education policies (Kay, 2024; Rogers, 2010), but this study is the first to show this with respect to the specific domain of outdoor learning. It also has implications for the success of nature connection programmes such as Generation Wild, which depend on teacher agency for sustained implementation. When teachers' autonomy is curtailed by curriculum demands and accountability pressures, even well-designed programmes risk being marginalised or short-lived (Priestley et al., 2015; Waite et al., 2023). Conversely, our findings suggest that initiatives that explicitly support teachers' competence, motivation and capacity to negotiate systemic barriers are more likely to embed outdoor learning practices in schools (Barrable & Lakin, 2020; Biesta et al., 2015). This highlights the need for programme designers and policymakers to address not only individual teacher beliefs, but also the wider structural context that shapes what teachers feel able to do.

The barriers to outdoor learning expressed by participants were broadly similar to the findings of other recent studies with teachers in Europe and North America (Harris, 2023; Patchen et al., 2024; van Dijk-Wesselius et al., 2020; Walker et al., 2021). Constraints included issues in the school environment, such as lack of safe local green space and shortage of resources, and systemic issues such as lack of time to teach an overloaded curriculum and the need to prepare for standardised tests. At the wider education system level, these findings support Prince's (2019) conclusion that time is the most influential factor limiting outdoor learning, and that this is 'almost always linked to performativity and testing' (p. 335). Similarly, Edwards-Jones et al. (2022) identified test preparation as a key barrier to taking learning outside the classroom, with Waite (2010) showing that outdoor learning provision declines significantly as children move from the Early Years into Key Stage 1, and again at Key Stage 2, patterns closely linked to increased academic and assessment demands.

Strengths and limitations of the research

In adherence with principles of conducting qualitative research, the sample size was appropriate for a reflexive thematic analysis, allowing the research to explore teachers' individual experiences in depth while identifying patterns of shared meaning across the data set. A key strength of the study lies in its focus on teachers working in disadvantaged communities, an underrepresented group in outdoor learning research (Dillon & Lovell, 2022; Mann et al., 2022).

The study focused on teachers working in schools participating in Generation Wild, all of which were selected based on relatively high levels of economic disadvantage. However, the sample was also characterised by substantial variation to get a wide range of views. While all participating schools had relatively high levels of economic disadvantage, this varied significantly, from around 23% to over 80% of pupils eligible for free school meals. Furthermore, teachers taught in a wide range of school contexts across different regions of the UK, including England, Wales and Northern Ireland, and represented both urban and rural settings. This geographic and contextual diversity adds richness to the findings, particularly in understanding how access to greenspace, outdoor learning infrastructure and educational policy pressures differ across settings. Similarly, there was substantial variation in the ethnic and linguistic diversity of the school populations. However, most teachers identified as White British, which may limit the depth of insight into the lived experiences of teachers and families from ethnically minoritised backgrounds. Due to the voluntary nature of participation, and the time commitment involved in interviews, the sample may have been biased towards teachers who were positively engaged with the Generation Wild programme and more confident or enthusiastic about outdoor learning. This form of self-selection is common in this type of educational research, but it may mean that the views of more disengaged teachers were not fully captured.

CONCLUSION AND FUTURE RESEARCH

The themes constructed from interviews with UK primary school teachers in disadvantaged communities reveal the conflict between the value teachers place on children learning outdoors in nature and what they feel able to provide within the constraints of the education system. The findings show the power of targeting interventions such as Generation Wild at disadvantaged communities and offering children the chance to experience that 'different space'. However, they also point to a need for broader systemic change if time in nature is to become a more embedded and prioritised part of school life. Importantly, the findings reflect the continuing effects of lockdowns and the pandemic's long tail. Teachers spoke of children's emotional needs and behavioural challenges after the COVID-19 pandemic, and many viewed nature as a vital tool for recovery. However, they also described a disconnect between this belief and what they were practically able to deliver. This sense of professional conflict between knowledge of what children need and what is structurally possible has not previously been documented in relation to outdoor learning and presents an important avenue for further investigation.

This study's findings suggest that increasing capacity for outdoor learning cannot rely solely on changing individual teacher attitudes or skills. Instead, it requires addressing the policy and structural conditions that shape practice. Future research should build on these findings by taking a more systems-level approach to promoting outdoor learning. As proposed by Martineau and Bakopoulou (2024), the factors influencing outdoor learning should be understood across multiple ecological levels: the individual teacher, the school environment and the wider education system (Martineau & Bakopoulou, 2024). Systematic qualitative and quantitative investigations of the differences between teachers working in different school contexts would provide important evidence to support targeted policy change. Such work could also explore how structural pressures, such as accountability measures and curriculum frameworks, impact teachers' capacity to act on their professional values, particularly in disadvantaged schools.

CONFLICT OF INTEREST STATEMENT

Mark Stead, Julia Newth and Jonathan Reeves are employed by WWT. The remaining authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

DATA AVAILABILITY STATEMENT

The anonymised qualitative data underpinning this study are available under safeguarded access conditions at [TBC]. Access is available to registered users who agree to the End User Licence and the repository's conditions of use.

ETHICS STATEMENT

Ethics approval was provided by the School of Psychology Research Ethics Committee of Cardiff University, reference number EC21.12.14.6488.

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