

RESEARCH ARTICLE

Young people's networked constructions of nature: Evidence from a qualitative multiple case study in the United Kingdom

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Abstract

1. How young people interpret and engage with nature is an important consideration within our current biodiversity and climate crises. What remains less clear are the ways in which online, networked, spaces underpin young people's relationships with nature, and what consequences these spaces may have for in-person nature interactions.
2. Given the ubiquitousness of networked spaces in society, it has been argued that day-to-day life is increasingly 'postdigital', in that we may no longer distinguish meaningful differences between our online and offline worlds. Therefore, it is necessary to examine this collapsing physical-digital binary in the context of young people's in-person interactions with nature to examine the effectiveness of this theoretical perspective.
3. Utilising ethnographically situated, participant-as-observer methods, this qualitative multiple case study generated data across three rural residential outdoor education centres in England, Scotland and Wales, with young people aged 12–17. Participants were visiting the residential centres from urban schools in England and Scotland, with each group spending 5 days at their respective centre.
4. Reflexive thematic analysis of fieldnote data revealed that young people had previously constructed their understandings and interpretations of what nature 'is' through networked environments such as Instagram, TikTok and Minecraft. These networked constructions often contextualised young people's direct, in-person interactions with nature and demonstrated ways in which these online spaces influenced how nature was perceived and understood. The case is presented for interpreting the findings from a postdigital 'networked baselines' perspective.
5. The findings will resonate with practitioners and policymakers concerned with the relationships between young people, networked spaces and nature connectedness. Alongside this, given the editorial discussion on the impacts of 'nature on screen' from Silk et al. (2021) in *People and Nature*, this paper provides a set of empirical findings on how young people's organic engagements with nature

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on-screen provided a degree of foundational knowledge about what nature is, what nature is for and how nature should be engaged with.

KEYWORDS

nature, nature connection, networked baselines, outdoor education, outward bound, postdigital, young people

1 | INTRODUCTION

Examinations of the relationships between our online, networked, spaces and the development of a tangible sense of nature connectedness have begun to feature in academic writing (Flynn et al., 2022). This has included initial assessments of the role that screen-based engagements and broader media may have in facilitating or obstructing a sense of connection to nature (Downs et al., 2023; Hawley, 2022; Reed, 2024a; Silk et al., 2021). These are timely considerations given Brubaker's (2020) assessment that '[d]igital hyperconnectivity is a defining fact of our time' (p. 771) and that, in some way or another, our digital environments are always seeking to define our sociality, leisure and cultural engagements (Burnett & Merchant, 2020). We argue that these relationships are particularly important for examinations of nature connectedness and how nature comes to be 'known' in relation to Generation Z, the cohort of young people born between 1997 and 2012 who are often described as the 'social media generation' (Stahl & Literat, 2023). Such a perspective encourages us to explore how young people's constructions of nature are developed through their immersion in online environments, and what impacts these constructions could have in relation to how they engage with and perceive nature in-person.

These questions are particularly important given ongoing climate and ecological crises (Intergovernmental Panel on Climate Change, 2023) and the ways in which connections to nature are positively associated with pro-environmental care, such as engaging in actions that support environmental preservation and conservation (Otto & Pensini, 2017). Alongside these factors, scholars such as Fiore and Lin (2024) have identified a profound spiritual disjuncture between humanity and our intrinsic connections to the natural world—a detachment that estranges us from the very landscape that has historically sustained us. This viewpoint echoes the assertions of authors such as Louv (2005) and Soga and Gaston (2016), who contend that technological innovations and virtual experiences of nature are contributing to the erosion of genuine, physical connections with the environment. It is recognised that humans are increasingly disconnected from the nature that is directly around them.

This paper takes the above set of circumstances as a starting point and examines some of the ways 50 young people aged 12–17 from three schools in England and Scotland constructed certain views of nature through prior interactions within their networked worlds. All young people were from inner-city environments and were embedded in online spaces as part of their day-to-day lives at

home. Through the development of a qualitative multiple case study, Author One spent 15 days embedded within three of The Outward Bound Trust's residential outdoor education centres in England, Scotland and Wales. Adopting a quasi-ethnographic approach to the cases through a participant-as-observer method (Silverman, 2021), alongside informal conversations with young people, the findings provide a set of first-hand accounts of the ways in which young people engaged with nature through a networked lens. We find that platforms such as Instagram, Minecraft and TikTok were the most relevant digital platforms shaping young people's in-person interactions with nature and present evidence demonstrating that young people experience nature through a 'networked baseline', where physical interactions with nature were informed and mediated by prior screen-based engagements.

2 | NATURE, NETWORKED SPACES AND YOUNG PEOPLE: POSTDIGITAL CONSIDERATIONS

The themes generated from this study have been assessed through a postdigital lens. This section begins by outlining the postdigital in the present research context, before examining germane literature on the relationships between young people, networked spaces and nature.

2.1 | Postdigital constructions of society

The ways in which online, networked, spaces are entangled with our in-person interactions and leisure are increasingly well-understood (Sintas et al., 2023; Yau & Reich, 2018). As Elwell (2014) describes, the lines of difference between our so-called 'analogue' and 'digital' lives have blurred to the extent that distinguishing between the two is increasingly challenging. Such a perspective has given rise to the development of postdigital theory which, following an editorial on the matter by Jandrić et al. (2018), has increasingly been adopted in studies concerned with the relationships between society, education and technology. Postdigital terminology emerged at the beginning of the millennium (Maeda, 2002; Pepperell & Punt, 2000) and the present hypothesis suggests that "we are increasingly no longer in a world where digital technology and media is separate, virtual, 'other' to a 'natural' human and social life" (Jandrić et al., 2018, p.

893). As a theoretical perspective, the postdigital has developed to offer a theoretical platform from which to examine how the digital interacts with and informs our daily lives. By examining the intricate connections between in-person and networked realities, it invites re-examination of how sociotechnical relationships shape our day-to-day experiences and, in the case of this paper, societal perceptions and understandings of nature.

The stance we have taken towards the postdigital is largely based on Knox's position on 'postdigital thinking', which features in a discussion paper from Jandrić et al. (2019). In the paper, Knox's assessment of postdigital thinking builds on the paradox of the postdigital by demonstrating how we are not in a 'post' digital society, in the sense that we have not moved beyond the digital, but rather we are in an era where our lives are characterised by more-and-more digital technologies and infrastructures. Further, as Adams and Jansson (2023) suggest, placing emphasis on technological ubiquity is not just about individual devices such as iPads or supercomputers; we must also attend to the sociocultural structures which have come to normalise immediate connectedness (e.g. instant messaging and notifications), information sharing (e.g. collaborative online communities like Reddit) and consumption (e.g. e-commerce and online banking). We may think of life in the Global North as inseparably entangled with technology in ways that reconfigure day-to-day actions, activities and perceptions.

The emergence of postdigital theorising has generated a complex and ever-evolving body of literature that may be applied to ongoing biodiversity and climate and ecological crises, including fields such as environmental education (Reed, 2024a; van Kraalingen, 2023) and environmental activism (Beames & Reed, 2023). Alongside Knox's work on the paradox of the postdigital, narratives of entanglement in postdigital theory from Traxler et al. (2022) also informed the direction of the study. They suggest that the postdigital stands on a foundation which recognises 'entanglements between the online and offline, analogue and digital, and biological and informational' (p. 508). Positioning entanglement as an epistemological foundation in assessments of the postdigital recognises the impact and scale of technology and networked spaces in our day-to-day lives. Of course, this is not necessarily a fresh interpretation, with Negroponte (1998) suggesting over two decades ago that '[I]ike air and drinking water, being digital will be noticed only by its absence, not its presence' (para. 4).

Despite an increase in postdigitally informed studies, analyses of human interactions with nature through a postdigital framework have been sparse, leaving uncertainty regarding the potential utility of a postdigital perspective in comprehending the technological dynamics that may shape human-nature relationships and connectedness. This is especially pertinent given Natural England's (2020) *Nature Connection Index* does not consider what role networked spaces, such as gaming and social media platforms, might have in foregrounding or reinforcing a connection to the natural world. This omission is surprising, given the Index aims to provide an evidence-based metric of nature connectedness,

including how childhood experiences correlate with nature connection in adulthood. It is from this vantage point that the present research investigates the degree to which a postdigital perspective can enrich our understandings of young people's perceptions of and connections to the natural world.

2.2 | Networked spaces and the construction of experience

Research is beginning to identify the role online environments play in shaping how young people formulate meanings about the world around them (Hjorth & Richardson, 2017; Ofcom, 2023). The repercussions of such activities on young people's lives beyond the screen in relation to nature connectedness have been underexplored. Given ongoing shifts in gaming and media landscapes, coupled with evolving patterns of young people's online engagements (Ofcom, 2023), there is an ongoing need to evaluate the influence of online media on young people's constructions of reality.

The work of Hjorth and Richardson (2017) is a helpful starting point for exploring young people's networked transfer of knowledge in relation to nature and to each other. Central to their argument is the notion that digitally mediated perceptions of reality foster a continual augmentation of place and space, thereby facilitating a hybridised experience of the lifeworld (Hjorth & Richardson, 2017). Leaning on this sense of hybridity between the online and offline enables us to view an ongoing fusion between the physical and the digital in ways which inform the human experience. This aligns with Ruckenstein (2015) who, in an analysis on the role of the Nintendo DS in children's lives, suggested that mobile technologies allowed young people to 'play at life' in virtual environments. These technologies are 'continually altering and re-making ways in which children experience and interact with the human and non-human world' (Ruckenstein, 2015, p. 354). Indeed, Morse and Emery's (2023) analysis of literature on the impact of online spaces on perceptions and constructions of place supports the emerging recognition that these platforms can mediate a sense of knowing, and that this brings about a series of ethical and political implications.

Given that young people's interactions with online and screen-based interfaces have been shown to shape their in-person experiences, it becomes plausible to describe their intertwined digital and physical spaces as fostering a form of 'worldbuilding' (Hartley et al., 2021). This suggests that the construction of everyday human reality and understanding is increasingly shaped and mediated by technology and media. While we note that discussions of worldbuilding have traditionally revolved around imaginative and fictional contexts (Martin & Sneegas, 2020), it is necessary to examine how online media contribute to how young people perceive and interact with their social and cultural environments. Indeed, networked spaces such as TikTok, when actively navigated by a social actor, may serve as an arena for shaping how social life is interpreted and

engaged with. If we take the view that nature is a social construction (Eder, 1996; Greider & Garkovich, 1994), whereby humans interpret and attribute significance to nature through their social and cultural interactions, a postdigital stance prompts examination of how digital-physical entanglements might impact how nature is conceptualised and understood.

It is here that the concept of game transfer phenomena (GTP) is also important. GTP posits that a continuum exists between the narratives and common practices that feature in gaming participation and the ways in which gamers may link these to their physical lives (Ortiz de Gortari et al., 2011; Ortiz de Gortari & Gackenbach, 2021). For instance, in Ortiz de Gortari and Gackenbach's (2021) research, 91.3% of the young people in the study had experienced game elements transferring to the physical world, including 'thinking about using video game elements in real-life contexts' (p. 12). Poels et al. (2015) also describe how game elements in World of Warcraft influence user associations, daydreams and perceptions in day-to-day living. They recognised that the development of vocabulary and slang was affected by gaming, and gamers also interpreted 'real-life' objects through the lens of in-game elements. Recent work by Wragg and Whall (2024) also explains how some augmented reality apps, such as *Pokémon Go*, encourage users to explore their local surroundings, seek out points of interest and gain a richer understanding of their neighbourhoods.

This concept of transfer from the digital to the physical may also be traced through social media. For instance, the works of Arts et al. (2021, 2022) demonstrate how online platforms such as Instagram and Twitter (now known as 'X') can influence how users perceive and interact with nature. They suggest that networked spaces project nature to the user and that these projections may alter how nature is understood, as well as providing more diverse interactions with the natural environment. Taken collectively, networked spaces facilitate a fast-paced participatory culture from which individuals can derive perceptions and understandings of the world around them (Alsaad et al., 2023; Hjorth & Richardson, 2017). It is, therefore, important to examine the ways in which young people's online entanglements may inform a sense of nature connectedness in the contemporary postdigital landscape and how this informs in-person interactions with nature. This represents a novel approach in the nature connectedness literature and encourages assessments of how networked spaces contribute to how young people come to know and interact with the natural world.

3 | METHODOLOGY

To examine the ways in which young people's networked constructions of nature informed their in-person nature interactions, an ethnographically informed approach to generating data was undertaken within a qualitative multiple case study design. The research followed the British Educational Research Association's (2018) ethical guidelines and approval was received by The University of Edinburgh's ethics committee (Ref JREE20092021). This section

outlines the study design, data generation methods, analysis and limitations.

3.1 | Study design

The study was based at The Outward Bound Trust (Outward Bound) in the United Kingdom (UK). Outward Bound delivers residential outdoor education to over 25,000 young people every year and is one of the UK's largest residential outdoor education providers (The Outward Bound Trust, 2024). Outward Bound were a collaborative partner for the research and helped shape the direction and focus of the present study (Reed, 2024b). In collaboration with Outward Bound, and in accordance with Agee's (2009) recommendations on reflective research question development, the research question was:

What role might online media and gaming platforms have in shaping how young people engage with outdoor spaces and places while at Outward Bound?

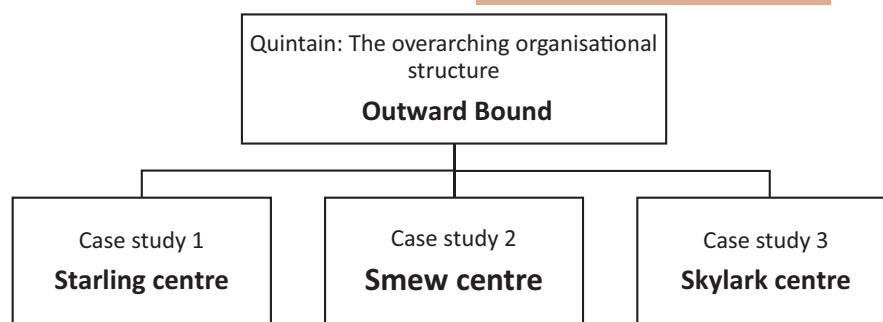
While this paper focusses on one research question, the data presented here formed part of a larger project. This included interviewing Outward Bound instructors on their perceptions of young people's mobile technologies and their uses of social media in practice (Reed, 2024c). The focus here, however, is on the young people and how networked spaces informed their understandings and interpretations of nature.

Stake's (2006) work informed the multiple-case study approach, comprising three Outward Bound residential outdoor education centres which are situated in rural areas with limited 4G and in-house Wi-Fi. This multiple-case study approach allowed for a more robust exploration of patterns and differences across cases, which contributed to building a more comprehensive understanding of the research topic. Each Outward Bound centre was treated as a bounded case, with the 'boundedness' of each centre defined using the criteria set out by both Hitchcock and Hughes (1995) and Cohen et al. (2018), which facilitated focussing on the temporal, geographical and organisational arrangements of each location. Following Stake's (2006) terminology, Outward Bound may be considered the *quintain* and represents the central issue that ties the individual cases together (Figure 1). From here on, the centre names are anonymised and referred to as the Starling, Smew and Skylark centres.

3.2 | Participants and data generation

Three schools took part in the research, with one attending each Outward Bound centre. The schools were selected through a convenience sampling approach (Schreier, 2018), made simpler by them having already booked their visit to Outward Bound. Parents and guardians provided informed consent for their child to take part in the research before they travelled to Outward Bound, with written

FIGURE 1 The overarching quintain and the three bounded case studies.



consent also obtained from each young person once they had arrived at each centre. All students visiting with the three schools were invited to participate in the research and none declined the invitation to participate. A total of 50 young people aged 12–17 participated in the study (22 male, 28 female), all of whom selected their own pseudonym for inclusion in the research. Of these 50 young people, 10 participated at the Starling centre, 15 at the Smew centre and 25 at the Skylark centre.

The three urban, mixed-sex secondary schools were from Edinburgh, Newcastle and London. All three schools were situated in areas of multiple deprivation, with the young people involved in the study often describing the Outward Bound environment as 'unlike home' and reporting that they had rarely left the boundaries of their city. Each study participant had routine access to a phone and to social media in their home environments and all were very familiar with platforms such as TikTok and YouTube. This resonates with work by Tsetsi and Rains (2017), who explain how the 'digital divide' for younger people from lower income households means they are more likely to be dependent on a smartphone.

Data collection in this phase of the study utilised a *participant-as-observer* approach (Silverman, 2021), where the observer actively participates in daily activities alongside the participants in the study. The first author spent 5 days at each Outward Bound centre, actively engaging in the programme together with young people. By effectively living alongside participants, a unique opportunity for continuous data generation from 7a.m. to 10p.m. daily was afforded. Observations were documented carefully and thoroughly following Geertz's (1973) conceptualisation of fieldnotes as records of social interactions that capture fleeting moments. Borrowing methods provided by Emerson et al. (2011), initial notations of social situations were recorded and labelled as 'extended jottings', which aimed to capture detailed interactions between participants and their natural surroundings. These jottings were subsequently refined into comprehensive reconstructions of observed events, which incorporated the informal conversations the first author had with participants.

3.3 | Data analysis

The analysis of the reconstructed fieldnotes comprised five inter-linked stages that were informed by Braun and Clarke's (2022) reflexive thematic analysis approach. This flexible and iterative approach

to identifying and interpreting patterns in qualitative data allowed us to actively engage in the development of themes, acknowledging the value of our subjective influence on the analysis. First, drawing from Hammersley and Atkinson's (2019) insights on the importance of fieldnote engagement for data familiarity, the notes were read and re-read for data familiarisation (step one). Specific words and sentences were then categorised in the document margins, which also represented the first interpretive engagement with the data (step two). This process involved aligning these initial categorisations with participant experiences and placing them alongside the study's research question. Next, these categories were synthesised into narrative memos, where focus was placed on intersecting themes (step three). This integrative approach facilitated the identification of overarching thematic patterns across the cases. Themes with limited overlap between cases were reconsidered iteratively, thus helping to ensure that the findings were a trustworthy representation of the data (step four). Finally, the thematic patterns were visually represented through spider diagrams, after which a series of exemplar data from the fieldnotes were selected to document these themes (step five). It is these exemplar data that are shared in the following section in the form of vignettes. This was important for the study, as they were selected due to the way they each represented the five dominant themes from the analysis, which in turn ensured that young people's voices and their situated experiences were at the forefront of the discussion. With this in mind, the findings section begins by outlining the overarching themes and then presents four corresponding vignettes.

3.4 | Methodological limitations

Despite carefully reconstructing the moments observed during the time spent with young people, it is likely that some aspects of young people's networked entanglements with nature and each other were missed and/or overlooked. A different researcher with a different group of young people may have arrived at slightly different findings. The low number of participants is also a natural study limitation. While the intention was to spend significant amounts of time with small groups of young people, the findings presented here come from a small subsection of over 25,000 young people who visit an Outward Bound centre in the UK annually. The findings should therefore be treated with an element of caution, as the degree to

which they can be transferred to other contexts will vary, depending on the similarity of these contexts (Stake, 2006) and the connections the reader is able to make with their own situation (Kennedy, 1979).

To ensure the above limitations did not detract from the trustworthiness of the study, Lincoln and Guba's (1985) trustworthiness criteria were kept in mind at all stages. Firstly, acknowledging the approaches taken to credibility and confirmability from Nowell et al. (2017), an audit trail was developed to demonstrate a step-by-step approach to the analysis of data. This approach was informed by generating thick descriptions of participant realities (e.g. Geertz, 1973), which were essential as we examined young people's experiences in nature and analysed the networked meanings attached to them, as illustrated in the exemplar data in the next section. That said, we acknowledge that the representations of reality in this study are grounded within an assortment of language, perceptions and thoughts that have come together, if only briefly, to inform the construction of findings. As Stake (1995) argued, researcher 'subjectivity is not seen as a failing needing to be eliminated but as an essential element of understanding' (p. 45). We held this contention throughout the research process and thus recognise the ways in which this subjectivity frames valuable insights into young people's networked constructions of nature.

4 | FINDINGS: YOUNG PEOPLE'S NETWORKED CONSTRUCTIONS OF NATURE

Analysis of the data generated across the three residential outdoor education centres indicated that young people were applying their existing networked understandings of nature to the in-person rural spaces they encountered throughout their time at Outward Bound. In many ways, it appeared that young people's prior online engagements with nature acted as a constant filter through which they individually and collectively interpreted and engaged with nature in-person. This finding was constructed from five themes which were generated during the analysis:

1. Online content provides young people with a common reference point. These cultural factors underpin group engagement with nature.
2. The Outward Bound environment 'brings to life' young people's collective online experiences of nature.
3. Outward Bound offers young people opportunities to 'try out' something seen online.
4. Gaming platforms can offer young people a knowledge base that is actively applied to nature-based settings.
5. For young people, the distinction between online and offline nature is blurred.

To share how these themes unfolded at Outward Bound, four narratives have been constructed from factual and individual observed interactions between the participants and nature across each

of the centres. These narratives aim to place the reader at the heart of young people's experiences and have been selected as they represent vivid examples of the above themes. They focus on three platforms—Minecraft, TikTok and Instagram—which were the dominant online spaces discussed by young people. The four narratives are presented next, with the findings explicated and then interpreted with germane literature in the section after. Note that no meaningful differences were found in the analysis of data from participants from the three different schools, nor between participants of different age and gender. While these factors are not presented or discussed here, they may benefit from targeted examination in the future.

4.1 | Minecraft and fire

We venture into the woods, making our way towards a sizable parachute nestled among the trees. Beneath its canopy lies a fire pit, with sunlight filtering through the foliage, this is a special place to reflect on the course so far. The group are equipped with flint fire starters, cotton wool and a jug, and embark on the challenge of igniting their own flames. Their excitement for the task is palpable. 'This is just like Minecraft! OMG, this is way harder!' exclaims Emma (age 13), grappling with the task of sparking a successful fire. 'I'm good at this on Minecraft; if only I had some Netherrack, that's what I need,' she muses and looks to her friends alongside her. Her comment highlights how Minecraft provides a shared cultural reference point for the task. 'Yeah, I can't get mine to work at all,' adds James (age 15), voicing his struggle. The group delves into a discussion on techniques, echoing their online discussions about game strategy, and ponder how a Minecraft Fire Charge might enhance their efforts. The fire-starting activity has quickly become a tangible way for these young people to 'try out' something they've only previously encountered online. 'Do you all enjoy Minecraft, then?' interjects the instructor. Marcus (age 14) eagerly responds, 'Yeah! You can light fires, learn about oak and birch trees—I've spent so much time exploring caves and cliffs. But this fire is way harder to light, though'. What these young people know about fire in Minecraft is flowing into their real-world actions—there is a seamless integration of both environments. (Smew Centre, day 3)

4.2 | Minecraft and flora and fauna

We are out on a rowing boat activity and, as we approach our destination on the other side of the lake, we notice a pleasure boat preparing to depart from the nearby dock. The sizable vessel creates waves that require us to wait at a distance before proceeding. Seizing the moment, the instructor positions himself at the bow of the boat. 'Look at all the trees!' he exclaims, gesturing towards the trees dotting the hillside. 'Does anyone know what types they might be?' Ethan (age 13), positioned just ahead of me, eagerly chimes in, 'yeah! I know all the trees from Minecraft—alder, oak and ash. Yeah, it's educational!' he responds proudly. His knowledge reflects how

online content, especially gaming in this instance, seems to provide a reference point that underpins his understandings of the natural world. 'But does it teach you how to start a fire?' the instructor retorts, highlighting the gap between virtual knowledge and real-world skills. 'Yeah!' echoes the group almost in unison. 'You can use flints and start fires really quickly'. With this collective agreement, Amy (age 12) then describes to Gemma (age 13) how 'the trees on Minecraft are so cool, I've started a tree farm and have raised my compost level by three points. I can make my own fertiliser now! I don't think these trees are part of a tree farm though'. Their ongoing discussion exemplifies how an online game such as Minecraft can generate a knowledge base that these young people are applying in this real-world setting. The instructor has now settled back into his seat as the pleasure boat departs, signalling our readiness to approach the jetty. (Skylark Centre, day 3)

4.3 | TikTok and fern tattoos

With a slightly warmer breeze and the sun peeking through the clouds, the morning presents an ideal setting for our rock climbing adventure. The narrow path leading to the crag gently ascends, winding around a sharp left bend before reaching our destination. Ferns line the track, adding a touch of greenery to our surroundings. Upon arriving at the crag, Emma (age 12) excitedly suggests the idea of creating fern tattoos, inspired by TikTok. The notion sparks a wave of enthusiasm among the group. Curious, I enquire about these 'nature tattoos'. It turns out there's a TikTok trend where individuals press nature-based objects, like ferns, onto their skin for an extended period, leaving an imprint. Deciding to give it a try, the instructor breaks off a small piece of fern and Naomi (age 13) experiments with it, achieving some success. Pressing the fern firmly against her hand, she reveals a delicate outline of the fern upon removal, eliciting further excitement from the group. 'Look at that! I'm definitely trying this back home', exclaims Oliver (age 12), after his own successful attempt. What begins as a day of rock climbing subtly transforms into an exploration of a TikTok trend and the young people pose for photographs and stow pieces of fern in their pockets for later. This playful interaction highlights how the Outward Bound environment can 'bring to life' young people's online experiences, giving them a chance to physically recreate what they've encountered in a networked space. (Skylark Centre, day 4)

4.4 | Livestreaming a wood anemone on Instagram

The sound of boots crunching on gravel fills the air as we move steadily up our winding track, the landscape has shifted from dense trees to open views. As we pause for a break, I notice Sophie (age 16) stepping off the path, pulling out her phone. 'I'll catch up in a sec!' she calls back, turning her attention to her phone and placing it on a tree stump. She taps a few times on the screen and then appears to start a live stream. 'Hey, everyone! I'm out here on a school trip

and look at this view', Sophie says, turning the camera to capture the trees and rolling hills behind her. 'It's seriously beautiful, like something straight out of a movie!'. As the group continues to rest, Sophie continues talking, 'I mean, I've watched so many videos about hiking and nature, but actually being out here, it's amazing. Look at this flower I picked (showing a wood anemone), it's like being an adventurer'. Once the flower has been shown to the camera it is dropped to the floor, its usefulness now apparently over, and after a short while the live stream ends. Sophie returns to the group, phone in pocket, and begins chatting with a couple of her friends. The immediacy of the live stream and the way that the wood anemone was used to express a sense of landscape connectedness to her audience (her 'networked others') appeared superficial, but nonetheless meaningful and important to Sophie. (Starling Centre, day 2)

5 | DISCUSSION

From a postdigital perspective, the constructed vignettes offer contemporary insight into the ways in which young people's online lives underpinned how they interpreted and engaged with nature within the rural environments used by Outward Bound. This section places the study's findings in the context of existing literature and presents a 'networked baselines' conceptual approach which recognises the roles online environments can have in setting expectations, constructing significance and informing behaviour in nature.

5.1 | Postdigital networked baselines informing interactions with nature

Our findings resonate with the proposition that online spaces may facilitate a dual engagement with place in ways that encompass both physical locales and virtual interfaces (Morse & Emery, 2023). The data certainly affirms such a perspective, with young people across all three cases relating their networked engagements with nature to their in-person interactions. Young people's prior digital contact with natural environments appeared to prime their understandings of physical encounters with nature in the Outward Bound setting. Ultimately, this brings into focus how screen-based interactions with nature may contribute to how a sense of place and nature connection materialises in a physical context. Such a perspective may be recognised through examples like young people's nature tattooing from TikTok and knowledge of flora and fauna generated through Minecraft.

The notion of online spaces influencing young people's physical perceptions and behaviours aligns with the work of Schwanen et al. (2008), who suggested that interactions with place may be understood as 'an amalgam of interwoven, entangled and dynamic sets of nodes and links where digital and 'real' spaces are folded into one another' (p. 525). Such a statement resonates with our findings and

reflects a postdigital characterisation of young people's Outward Bound experiences (Jandrić et al., 2018). This is because the virtual and the physical collided in a way that informed young people's normalised interpretations and interactions with nature. We may begin to think of this collision as a form of postdigital nature connection and interaction. The networked platforms within which these young people participate served as an underpinning experiential reference point, which foregrounded their in-person encounters with nature and brought additional meanings to them. This raises additional questions about policy and practice in efforts to enhance and measure nature connectedness, while also offering a novel lens through which to consider recent legislation such as the Online Safety Act (Department for Digital, Culture, Media & Sport, 2023).

We believe the findings highlight the importance of recognising the concept of 'networked baselines' within the context of young people's Outward Bound experiences. While authors such as Hjorth and Richardson (2017) have already demonstrated how augmented reality gaming can frame and inform young people's play, the analysis presented here extends this discourse. The essence of networked baselines posits that the consumption of content within interconnected digital environments (e.g. social media and gaming) permeates and influences everyday offline experiences by blurring traditional boundaries between the virtual and the physical. For the young people in the current study, a two-staged networked baseline may be observed that encompasses (1) the setting of expectations and (2) the construction of significance. We believe these two components, discussed next, may inform the development of young people's networked baselines and thus provide a foundation for examining how young people understand and engage with nature in a postdigital world.

5.1.1 | Networked baselines setting expectations

Throughout the weeks spent with the young people at Outward Bound, a set of networked-derived expectations were present and served as a filter for young people's curiosity and understanding of the world around them. It became increasingly clear that young people's networked environments provided a foundation upon which they made sense of their physical Outward Bound spaces. In essence, networked environments set young people's expectations of what constitutes nature and mediated their in-person engagements with it, both individually and as a group. These expectations were present when young people related fire and flora and fauna back to Minecraft, especially when Emma realised that lighting a fire 'is just like Minecraft! OMG, this is way harder!'.

As Goodman et al. (2016) suggest, coming to know nature in online environments is a contested process, 'by which environmental meanings are constructed and negotiated across space, place and at various scales' (pp. 677, 678). This construction of meaning may also be observed when considering how Sophie interacted with a wood anemone during her Instagram live stream. This example reveals a complex interconnection between online presumption (as she

was contributing content to a social media platform that could be consumed by others, rather than consuming it herself) and offline, physical experience, which highlights the intricate dynamics through which digital engagements shape individuals' understandings of, and engagement with, the natural world.

Alongside this, Sophie's live stream served as a projection of the significance she attributed to nature (e.g. using and discarding the wood anemone) and the ways in which she described nature and shared this view with others through a networked environment. Such a finding adds yet another layer to the ways in which young people come to know nature and demonstrates an entangled process of (1) networked environments setting expectations before visiting spaces that are considered 'wilder' nature (as opposed to urban nature), (2) how these expectations informed human-to-nature engagement and (3) the subsequent re-mediation of these experiences through online sharing, allowing Sophie's viewers to engage with her environment vicariously.

5.1.2 | Networked baselines constructing significance

While the mediating effects of online environments on offline social experiences have been interrogated (Standlee, 2019), little attention has been given to how these online networks frame and construct a sense of significance in relation to in-person nature interactions. Importantly, the findings presented extend beyond narratives of the impact of television and media-based conservation content on pro-environmental behaviour (Jones et al., 2019; Males & Van Aelst, 2021); the ways in which a sense of significance was constructed around nature engagements revealed a more nuanced and organic tapestry of how nature is presented in contemporary youth cultures, and by social media influencers in particular. Such a finding encourages nature connection frameworks, like the Nature Connection Index from Natural England (2020), to consider how social media and gaming platforms mediate a sense of 'knowing' nature. As shown in Sophie's example with the wood anemone, networked spaces can help young people share their experiences of nature with others. It will be necessary for future research to more deeply understand how young people construct the personal meanings they have for nature through these online environments and the impact these constructions have on social media viewers and followers.

The findings also draw attention to how young people's consumption of content in online environments such as TikTok and Minecraft underpins what is or is not considered important when interacting with nature. For instance, the significance young people placed on the ferns in the nature tattooing example was due to ferns having been seen on TikTok, which lent a sense of importance to them. This form of networked baseline represents an influencer-derived construction of how to engage with nature and which aspects of nature may be deemed most influential, useful or entertaining. A simple examination of the TikTok hashtag #NaturalTattoo reveals multiple videos demonstrating how to press a fern against one's skin

to leave an imprint. Indeed, the beauty channel Malavara (2020) has a video on nature tattooing with over 42 million views. Young people's nature tattooing at Outward Bound may be understood as a TikTok-mediated form of nature interaction, whereby the significance of nature (in this case, ferns) was predetermined through prior screen-based consumption. It is important to note here that while young people at Outward Bound often related their experiences in nature back to social media influencer content, additional research is required to assess how widespread this phenomenon is—at other outdoor education providers, for example.

5.2 | Curated nature and the influence of algorithms informing behaviour

Following the above discussion on the setting of expectations and the construction of significance, we move to highlighting how powerful online algorithms can influence the perceptions and experiences of online audiences. Indeed, Burrell and Fourcade (2021) described algorithmic intermediation in online spaces as 'transforming the way people interact, associate, and think' (p. 213). With young people's in-person behaviour and peer-peer interactions with nature seemingly foregrounded by prior networked engagements, the findings encourage us to consider how forms of 'curated nature' in fast-paced influencer cultures shape young people's behaviours in outdoor spaces. While the *curated self* has been thoroughly examined in relation to networked environments (Márquez et al., 2023), critical interrogations of *curated nature* in these online spaces, and its impact on young people's in-person behaviours with nature, have received limited attention. Indeed, the three dominant platforms discussed in this paper (TikTok, Instagram and Minecraft) all curate a sense of what nature 'is' and how it should be engaged with through various platforms, algorithms, styles, mediums and cultures. This finding draws attention to the ways in which fast-paced networked environments may construct meanings of nature in certain ways for certain audiences. These constructions are fluid and ephemeral, in that they reflect the cultural trends of the time.

We therefore suggest that the socially mediating power of algorithms in delivering tailored content to individuals is critically important here. These algorithms, by creating echo chambers, potentially reinforce specific narratives about nature while neglecting diverse perspectives. Reed and Beames (2024) describe this issue as facilitating a form of 'networked architecture', where algorithmic frameworks shape our daily online interactions. The power and reach of this phenomenon distinguish contemporary online experiences from traditional storytelling, as the content is prescribed to consumers based on their monitored online activity, thus impacting (and possibly limiting) young people's perceptions and behaviour in outdoor spaces in ways that require further exploration. Storytelling has long influenced human interactions with nature by shaping our understanding from ancient myths to folklore (Flint & Jennings, 2020), and networked constructions of nature arguably represent a modern iteration of cultural and environmental learning with unchecked

influence. Interpreting young people's networked baselines and subsequent in-person behaviour patterns with nature thus require greater scrutiny through empirical inquiry, especially in relation to the educative, accurate and truthful qualities of networked nature curation alongside the mediating influence of algorithms.

6 | CONCLUSIONS AND IMPLICATIONS

This paper has explored how young people's online interactions with the natural world framed and informed their in-person engagements with nature at three residential outdoor education centres in England, Scotland and Wales. Drawing on a postdigital stance (Jandrić et al., 2018), the findings demonstrate the entangled foundations of young people's networked interactions with nature on-screen, while also showing how these provided a set of networked baselines which informed in-person nature engagements. Such a finding supports the work of Hjorth and Richardson (2017), who outlined the potential for online environments to continually mediate in-person interactions with place. For the young people in this study, their prior online engagements with nature filtered and informed how they came to 'know' and interact with the natural world. Our analysis of data has given rise to a series of considerations in relation to young people's 'networked baselines' in nature: Setting expectations, constructing significance and algorithms affecting interpretation and behaviour.

6.1 | Networked baselines: What's new here?

Laying the foundations of a networked baselines approach through these online spaces prompts us to ask: What's new here? Indeed, young people's cultural artefacts (e.g. oral stories, television, books) have often framed how the world around them is interpreted and engaged with. As Stewart (2008) suggested, our place-based interactions with the land are bound by a series of cultural and environmental histories and narratives that shape and reshape the relationships we have with nature. We have, therefore, concluded that the interactions with nature presented in this paper are not necessarily 'new', but can be regarded as 'newly different'. These crucial differences are worthy of greater interrogation.

First, the content engaged with by young people in online environments is always-on and always-available. These characteristics allow cultural phenomena like *nature tattooing* to cultivate a pervasive youth cultural awareness. Such awareness has the potential to influence—and homogenise and narrow—perceptions of nature, irrespective of geographical boundaries or physical proximity to peers. Secondly, the portability of content means that accessing cultural artefacts such as TikTok content is no longer bound to a specific place or time. This transcends previous spatial and temporal constraints (e.g. watching a television show on a certain day and time) and enables young people to access global content at a moment's notice. Finally, with networked spaces facilitating a degree of reciprocity (where young people can both consume and produce content), how

nature is curated in online spaces, and the impact this may have on contemporary youth cultures, means that young people may feel like they have a certain agency in constructing notions of what nature is and what it means to them. Young people can thus be recognised as curators themselves who can seamlessly construct and consume nature on screen, across a range of shared networked spaces.

6.2 | Implications for practice

While Beery et al. (2023) highlight the increasing disconnection humans are experiencing from nature, it may be that the findings presented here somewhat reframe what we come to interpret as 'disconnection'. Young people's prior engagement with nature in networked environments foregrounded how a sense of nature connection manifested during their Outward Bound visit. In outdoor education specifically, policy makers, centre leaders and instructors may benefit from recognising the role networked environments can have in shaping young people's understandings of nature and thus integrate digital literacy and critical thinking skills into curricula and practice. These factors could be incorporated into instructor training and facilitation approaches.

Given that another study from the same inquiry revealed that instructors are very critical of young people using mobile digital technologies in the outdoors, as they disrupt opportunities for nature connection (Reed, 2024c), the findings presented in this paper demonstrate that it does not matter if young people's technology is physically present or not: networked environments can still play a dominant role in nature-based experiences, even if a digital device is not present. In many outdoor education programmes, developing a connection to nature is an explicitly stated intended learning outcome and, given ongoing climate and ecological crises, considerations of how young people curate and consume nature in networked spaces will be important. This means that both educators and policy makers need to recognise how young people may bring their networked baselines to their physical encounters with nature, and that this will influence how learning outcomes around nature connection are achieved—whether positively or negatively. It may be that a pre-trip questionnaire is developed to gauge the level of young people's networked baselines, offering programme directors and instructors opportunities to tailor learning activities and outcomes around nature connectedness to each group.

Finally, our interpretation of findings question the efficacy of current attempts to measure nature connection (e.g. Natural England, 2020). With these forms of evaluation currently overlooking young people's networked spaces as a vehicle for developing understandings of nature, it may mean that a critical and ubiquitous aspect of nature connection development is not being assessed. The same may be said for national level studies such as *The Children's People and Nature Survey for England* (Natural England, 2023). Often, emphasis in these studies is placed on in-person interactions with nature, which may not recognise how young people's online interactions foreground how they come to 'know' nature in a postdigital

world. Our interrogation of the extant literature and our empirical data demonstrate that further empirical inquiry is required when examining the curation and consumption of nature in networked environments, and how this relates to nature connectedness. Such inquiry is essential for understanding how perceptions of and connections to nature are constructed, mediated and enacted in increasingly digitally entangled contexts.

AUTHOR CONTRIBUTIONS

Gale Macleod and Simon Kennedy Beames designed the initial research focus and secured funding; Jack Reed, Gale Macleod and Simon Kennedy Beames designed the study's methodology; Jack Reed generated and analysed the data with Gale Macleod and Simon Kennedy Beames verifying the data analysis; Jack Reed, with support from Gale Macleod and Simon Kennedy Beames, led the writing of the manuscript. All authors contributed critically to the drafts and gave final approval for publication.

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

This project produced qualitative fieldnote data with participants under the age of 16. The datasets are ethically sensitive, as they include handwritten notes about young people, including their name, age and the location of their school. As such, our ethical approval precludes us from releasing the data publicly.

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REFERENCES

- Adams, P. C., & Jansson, A. (2023). Postdigital territoriality: Disentangling from digital media as a return to place. *Annals of the American Association of Geographers*, 113(3), 658–674. <https://doi.org/10.1080/24694452.2022.2124147>
- Agee, J. (2009). Developing qualitative research questions: A reflective process. *International Journal of Qualitative Studies in Education*, 22(4), 431–447. <https://doi.org/10.1080/09518390902736512>
- Alsaad, A., Alam, M. M., & Lutfi, A. (2023). A sensemaking perspective on the association between social media engagement and pro-environment behavioural intention. *Technology in Society*, 72, 1–10. <https://doi.org/10.1016/j.techsoc.2023.102201>

- Arts, I., Duckett, D., Fischer, A., & Van Der Wal, R. (2022). Communicating nature during lockdown – How conservation and outdoor organisations use social media to facilitate local nature experiences. *People and Nature*, 4(5), 1292–1304. <https://doi.org/10.1002/pan3.10387>
- Arts, I., Fischer, A., Duckett, D., & van Der Wal, R. (2021). The Instagrammable outdoors – Investigating the sharing of nature experiences through visual social media. *People and Nature*, 3(6), 1244–1256. <https://doi.org/10.1002/pan3.10239>
- Beames, S., & Reed, J. (2023). Adventure sports, social media, and environmental activism. In D. Svensson, E. Backman, S. Hedenborg, & S. Sörlin (Eds.), *Sport, performance and sustainability* (pp. 33–49). Routledge.
- Beery, T., Stahl Olafsson, A., Gentin, S., Maurer, M., Stålhammar, S., Albert, C., Bieling, C., Buijs, A., Fagerholm, N., Garcia-Martin, M., Plieninger, T., & Raymond, C. M. (2023). Disconnection from nature: Expanding our understanding of human–nature relations. *People and Nature*, 5(2), 470–488. <https://doi.org/10.1002/pan3.10451>
- Braun, V., & Clarke, V. (2022). *Thematic analysis: A practical guide*. Sage Publications.
- British Educational Research Association. (2018). *Ethical guidelines for educational research* (4th ed.). British Educational Research Association. <https://www.bera.ac.uk/publication/ethical-guidelines-for-educational-research-2018>
- Brubaker, R. (2020). Digital hyperconnectivity and the self. *Theory and Society*, 49(5), 771–801. <https://doi.org/10.1007/s11186-020-09405-1>
- Burnett, C., & Merchant, G. (2020). *Undoing the digital: Sociomaterialism and literacy education*. Routledge.
- Burrell, J., & Fourcade, M. (2021). The society of algorithms. *Annual Review of Sociology*, 47(1), 213–237. <https://doi.org/10.1146/annurev-soc-090820-020800>
- Cohen, L., Manion, L., & Morrison, K. (2018). *Research methods in education* (8th ed.). Routledge.
- Department for Digital, Culture, Media & Sport. (2023). *Online safety act 2023*. <https://bills.parliament.uk/bills/3137>
- Downs, K. B., Schultz, C., Stonehouse, P., & Faircloth, B. (2023). Teaching through the screen: How our planet impacts adolescents' feelings of connection to nature. *Interdisciplinary Journal of Environmental and Science Education*, 19(4), 1–14. <https://doi.org/10.29333/ijese/13723>
- Eder, K. (1996). *The social construction of nature: A sociology of ecological enlightenment*. Sage Publications.
- Elwell, J. S. (2014). The transmediated self: Life between the digital and the analog. *Convergence*, 20(2), 233–249. <https://doi.org/10.1177/1354856513501423>
- Emerson, R. M., Fretz, R. I., & Shaw, L. L. (2011). *Writing ethnographic fieldnotes*. University of Chicago press.
- Fiore, A., & Lin, J. (2024). *Storying our relationship with nature: Educating the heart and cultivating courage amidst the climate crisis*. Bloomsbury.
- Flint, A., & Jennings, B. (2020). Saturated with meaning: Peatlands, heritage and folklore. *Time and Mind*, 13(3), 283–305. <https://doi.org/10.1080/1751696X.2020.1815293>
- Flynn, M. A., Veilleux, E., & Stana, A. (2022). A post from the woods: Social media, well-being and our connection to the natural world. *Computers in Human Behavior Reports*, 5, 1–10. <https://doi.org/10.1016/j.chbr.2022.100171>
- Geertz, C. (1973). Thick description: Toward an interpretive theory of culture. In C. Geertz (Ed.), *The interpretation of cultures* (pp. 3–30). Basic Books.
- Goodman, M. K., Littler, J., Brockington, D., & Boykoff, M. (2016). Spectacular environmentalisms: Media, knowledge and the framing of ecological politics. *Environmental Communication*, 10(6), 677–688. <https://doi.org/10.1080/17524032.2016.1219489>
- Greider, T., & Garkovich, L. (1994). Landscapes: The social construction of nature and the environment. *Rural Sociology*, 59(1), 1–24. <https://doi.org/10.1111/j.1549-0831.1994.tb00519.x>
- Hammersley, M., & Atkinson, P. (2019). *Ethnography: Principles in practice*. Routledge.
- Hartley, J., Ibrus, I., & Ojamaa, M. (2021). *On the digital semiosphere: Culture, media and science for the Anthropocene*. Bloomsbury Academic.
- Hawley, E. (2022). *Environmental communication for children: Media, young audiences, and the more-than-human-world*. Palgrave Macmillan.
- Hitchcock, G., & Hughes, D. (1995). *Research and the teacher: A qualitative introduction to school-based research* (2nd ed.). Routledge.
- Hjorth, L., & Richardson, I. (2017). Pokémon GO: Mobile media play, place-making, and the digital wayfarer. *Mobile Media & Communication*, 5(1), 3–14. <https://doi.org/10.1177/2050157916680015>
- Intergovernmental Panel on Climate Change. (2023). *Climate change 2023: Synthesis report*. IPCC. <https://www.ipcc.ch/report/ar6/syr/>
- Jandrić, P., Knox, J., Besley, T., Ryberg, T., Suoranta, J., & Hayes, S. (2018). Postdigital science and education. *Educational Philosophy and Theory*, 50(10), 893–899. <https://doi.org/10.1080/00131857.2018.1454000>
- Jandrić, P., Ryberg, T., Knox, J., Lacković, N., Hayes, S., Suoranta, J., Smith, M., Steketee, A., Peters, M., McLaren, P., Ford, D. R., Asher, G., McGregor, C., Stewart, G., Williamson, B., & Gibbons, A. (2019). Postdigital dialogue. *Postdigital Science and Education*, 1(1), 163–189. <https://doi.org/10.1007/s42438-018-0011-x>
- Jones, J. P., Thomas-Walters, L., Rust, N. A., & Veríssimo, D. (2019). Nature documentaries and saving nature: Reflections on the new Netflix series our planet. *People and Nature*, 1(4), 420–425. <https://doi.org/10.1002/pan3.10052>
- Kennedy, M. M. (1979). Generalizing from single case studies. *Evaluation Quarterly*, 3(4), 661–666.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Sage Publications.
- Louv, R. (2005). *Last child in the woods: Saving our children from nature-deficit disorder*. Algonquin Books.
- Maeda, J. (2002). Design education in the post-digital age. *Design Management Journal*, 13(3), 39–45. <https://doi.org/10.1111/j.1948-7169.2002.tb00317.x>
- Malavara. (2020, December 10). *Plant Power #kerala #india #forestfern #nature #beautyproducts #HolidayCrafts #plants #naturaltattoo #leaves #rainforest #fyp #viral* [TikTok]. <https://www.tiktok.com/@malavara/video/6904415463170706690>
- Males, J., & Van Aelst, P. (2021). Did the blue planet set the agenda for plastic pollution? An explorative study on the influence of a documentary on the public, media and political agendas. *Environmental Communication*, 15(1), 40–54. <https://doi.org/10.1080/17524032.2020.1780458>
- Márquez, I., Lanzeni, D., & Masanet, M. J. (2023). Teenagers as curators: Digitally mediated curation of the self on Instagram. *Journal of Youth Studies*, 26(7), 907–924. <https://doi.org/10.1080/13676261.2022.2053670>
- Martin, J. V., & Sneegas, G. (2020). Critical worldbuilding: Toward a geographical engagement with imagined worlds. *Literary Geographies*, 6(1), 15–23.
- Morse, A. L., & Emery, S. B. (2023). Avoiding the 'easy route': Young people's socio-spatial experience of the outdoors in the absence of digital technology. *Geoforum*, 141, 1–10. <https://doi.org/10.1016/j.geoforum.2023.103727>
- Natural England. (2020, March 16). *A summary report on nature connectivity among adults and children in England: Analyses of relationships with wellbeing and pro-environmental behaviours*. <https://publications.naturalengland.org.uk/publication/6005041314136064>
- Natural England. (2023). *The children's people and nature survey for England: 2023 update*. <https://www.gov.uk/government/statistics/the-childrens-people-and-nature-survey-for-england-2023-update>
- Negroponte, N. (1998, December 1). Beyond digital. *Wired*. <https://www.wired.com/1998/12/negroponte-55/>
- Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic analysis: Striving to meet the trustworthiness criteria. *International*

- Journal of Qualitative Methods*, 16(1), 1–13. <https://doi.org/10.1177/1609406917733847>
- Ofcom. (2023, March 29). *Children's media lives, 2023: A report from Ofcom*. Ofcom. https://www.ofcom.org.uk/_data/assets/pdf_file/0025/255850/childrens-media-lives-2023-summary-report.pdf
- Ortiz de Gortari, A. B., Aronsson, K., & Griffiths, M. (2011). Game transfer phenomena in video game playing: A qualitative interview study. *International Journal of Cyber Behavior, Psychology and Learning*, 1(3), 15–33. <https://doi.org/10.4018/ijcbpl.2011070102>
- Ortiz de Gortari, A. B., & Gackebach, J. (2021). Game transfer phenomena and problematic interactive media use: Dispositional and media habit factors. *Frontiers in Psychology*, 12(2021), 1–16. <https://doi.org/10.3389/fpsyg.2021.585547>
- Otto, S., & Pensini, P. (2017). Nature-based environmental education of children: Environmental knowledge and connectedness to nature, together, are related to ecological behaviour. *Global Environmental Change*, 47, 88–94. <https://doi.org/10.1016/j.gloenvcha.2017.09.009>
- Pepperell, R., & Punt, M. (2000). *The postdigital membrane: Imagination, technology and desire*. Intellect.
- Poels, K., Ijsselstein, W. A., & de Kort, Y. (2015). World of Warcraft, the aftermath: How game elements transfer into perceptions, associations and (day) dreams in the everyday life of massively multiplayer online role-playing game players. *New Media & Society*, 17(7), 1137–1153. <https://doi.org/10.1177/1461444814521596>
- Reed, J. (2024a). Postdigital outdoor and environmental education. *Postdigital Science and Education*, 6(2), 416–424. <https://doi.org/10.1007/s42438-022-00323-2>
- Reed, J. (2024b). *From virtual worlds to the outward bound trust: A study of contemporary residential outdoor adventurous education in post-digital space*. [Doctoral thesis]. University of Edinburgh, Edinburgh. <https://era.ed.ac.uk/handle/1842/41633>
- Reed, J. (2024c). Instructor perspectives on mobile technologies and social media in practice: Findings from the United Kingdom's outward bound trust. *The Journal of Experimental Education*, 47(1), 53–71. <https://doi.org/10.1177/10538259231186774>
- Reed, J., & Beames, S. K. (2024). Mobile technology and social media in the assemblage of outdoor pursuits: A theoretical stance on complexity and uncertainty. In S. K. Beames & P. T. Maher (Eds.), *Routledge handbook of mobile technology, social media and the outdoors* (pp. 13–22). Routledge.
- Ruckenstein, M. (2015). Playing Nintendogs: Desire, distributed agency and potentials of prosumption. *Journal of Consumer Culture*, 15(3), 351–370. <https://doi.org/10.1177/146954051349922>
- Schreier, M. (2018). Sampling and generalisation. In U. Flick (Ed.), *The sage handbook of qualitative data collection* (pp. 84–98). Sage Publications.
- Schwanen, T. I. M., Dijst, M., & Kwan, M. P. (2008). ICTs and the decoupling of everyday activities, space and time: Introduction. *Tijdschrift voor Economische en Sociale Geografie*, 99(5), 519–527. <https://doi.org/10.1111/j.1467-9663.2008.00489.x>
- Silk, M., Correia, R., Verissimo, D., Verma, A., & Crowley, S. L. (2021). The implications of digital visual media for human–nature relationships. *People and Nature*, 3(6), 1130–1137. <https://doi.org/10.1002/pan3.10284>
- Silverman, D. (2021). *Doing qualitative research* (6th ed.). Sage.
- Sintas, J. L., Belbeze, M. P. L., & Lamberti, G. (2023). Socially patterned strategic complementarity between offline leisure activities and internet practices among young people. *Leisure Sciences*, 45(1), 24–45. <https://doi.org/10.1080/01490400.2020.1782289>
- Soga, M., & Gaston, K. J. (2016). Extinction of experience: The loss of human–nature interactions. *Frontiers in Ecology and the Environment*, 14(2), 94–101. <https://doi.org/10.1002/fee.1225>
- Stahl, C. C., & Literat, I. (2023). #GenZ on TikTok: The collective online self-portrait of the social media generation. *Journal of Youth Studies*, 26(7), 925–946. <https://doi.org/10.1080/13676261.2022.2053671>
- Stake, R. E. (1995). *The art of case study research*. Sage Publications.
- Stake, R. E. (2006). *Multiple case study analysis*. The Guildford Press.
- Standlee, A. (2019). Friendship and online filtering: The use of social media to construct offline social networks. *New Media & Society*, 21(3), 770–785. <https://doi.org/10.1177/1461444818806844>
- Stewart, A. (2008). Whose place, whose history? Outdoor environmental education pedagogy as ‘reading’ the landscape. *Journal of Adventure Education & Outdoor Learning*, 8(2), 79–98. <https://doi.org/10.1080/14729670801906125>
- The Outward Bound Trust. (2024). *Get residential ready*. <https://www.outwardbound.org.uk/get-residential-ready>
- Traxler, J., Connor, S., Hayes, S., & Jandrić, P. (2022). Futures studies, mobilities, and the postdigital condition: Contention or complement. *Postdigital Science and Education*, 4(2), 494–518. <https://doi.org/10.1007/s42438-021-00245-5>
- Tsetsi, E., & Rains, S. A. (2017). Smartphone internet access and use: Extending the digital divide and usage gap. *Mobile Media & Communication*, 5(3), 239–255. <https://doi.org/10.1177/2050157917708329>
- van Kraalingen, I. (2023). Theorizing technological mediation in the outdoor classroom. *Postdigital Science and Education*, 5(3), 754–776. <https://doi.org/10.1007/s42438-022-00315-2>
- Wragg, J., & Whall, R. (2024). Outdoor play mediated through Pokémon: Facing the snorlax. In S. K. Beames & P. T. Maher (Eds.), *Routledge handbook of mobile technology, social media and the outdoors* (pp. 389–401). Routledge.
- Yau, J. C., & Reich, S. M. (2018). Are the qualities of adolescents' offline friendships present in digital interactions? *Adolescent Research Review*, 3, 339–355. <https://doi.org/10.1007/s40894-017-0059-y>

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