

Affordances in motion: beach-school pedagogy, materials and atmospheres in early childhood education

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ABSTRACT

This paper explores the pedagogical value of beach environments in early childhood education through a relational study involving photo-elicitation with young children and follow-up conversations with early years educators. Drawing on Gibson's ecological theory of affordances and Deleuze and Guattari's conception of assemblage, the research examines how children's encounters with the beach are configured through entangled relations with place, material, and atmosphere across shifting material, spatial and elemental relations. Ontologically, this paper foregrounds the beach as an environment in process - one that affords sensory, affective, and open-ended forms of play. Children's engagements with seaweed, ash, stones, and soundscapes reveal the value of learning encounters that resist predetermined outcomes. The GoPro camera, used as a research tool, further illustrates how method itself is co-constituted within the assemblage. This paper contributes to broader conversations about posthuman pedagogies and calls for more situated, affective, and ecologically responsive approaches to early childhood education.

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Introduction

The role of alternative outdoor environments for young children to play and learn within is a well-explored area in early childhood (Horton and Kraftl 2018; Kraftl 2014; Nairn and Kraftl 2016). Yet, studies have largely attended to forest school and woodland-based provision, offering a gap in the literature on the value of beach schools to support children's learning about the wider world. In contrast to woodland spaces, such environments may offer distinct opportunities for children to engage in developing an understanding of climate-related issues. Yet there remains a paucity of research offering the perspective of the young child within this context. For educators, becoming better attuned to what matters to them in beach environments may provide salient insight into the pedagogical value of beach schools.

The aims of this paper are twofold. Firstly, I aim to examine the pedagogical value of the beach environment for young children to learn about the natural world. This

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will be achieved through an initial literature review to provide definitional clarity regarding beach environments. I shall consider their spatial affordances, the mobility of materials and the elemental atmosphere in relation to learning opportunities for the young child. It is not, therefore, an exhaustive review. Instead, it is intended to scope and underpin the empirical part of this specific research project. My second aim is to consider how early years practitioners attune to the affordances of beach environments and how pedagogical decisions are made through the sensory and relational dynamics of the space. Rather than treating the beach as a setting containing discrete objects with fixed functions, this paper examines how capacities emerge and recede through changing relations among children, practitioners, mobile materials, spatial conditions and elemental forces. The analysis therefore attends to these shifting compositions. It approaches beach environments through three interrelated dimensions: spatial openness, mobile materials and elemental atmospheres. The paper's central contribution is an account of beach-school pedagogy as practitioners' attunement to the changing compositions of terrain, tide, weather, materials, bodies, technologies, and responsibility, through which affordances emerge, shift, and recede. Visual and participatory methods were used to explore children's and practitioners' engagements within these compositions. The discussion returns to the implications of this approach for early years pedagogy and research.

Situating beach environments

Fundamentally, any inquiry into the value of the beach environment must initially address the question of 'what counts' as a beach. While it may be defined in basic terms as a shore of a body of water covered by sand, gravel, or larger rock fragments, this would elide the complexity of such environments and downplay their processual nature. Beaches are, by virtue of the multiple yet often overlooked forces that compose them, agentic spaces with capacities to change form and shape. Day to day, it is the rising and falling tides, a product of gravitational attractions between Earth and the moon, that produce presences and absences of the shoreline (Hobbs 2012; Pilkey et al. 2011). At a different scale, human-induced climate change has been shown to contribute to coastal erosion and flooding in the UK (Kantamaneni et al. 2022; Masselink et al. 2020). The beach, then, can be considered with more complexity as an assemblage of intersecting forces including (but not limited to) the tidal shifts of seawater; the surface of sand or gravel; elemental factors such as the sun, wind, rain; the sensorial feelings of the air, light and auditory atmosphere; litter, debris, waste; beach creatures and birds; as well as human presence and absence (swimmers, scavengers, bathers, dog-walkers, staff practitioners and children). None of these elements are fixed but constantly in flux. In different moments, different things may come to matter. Following Stewart (2014), one might deem this interpretation as correlated with 'compositional theory', attuned to the coming together of things in which we, humans, affect and are ourselves affected by. Sensory is used throughout this paper in an expanded sense to describe embodied and affective relations across children, materials and atmospheres. Attending to what counts as a beach gives birth to multiple areas of inquiry that may offer valuable insight into the pedagogical values of this space for young children. The question also concerns who has the authority to name, access and organise a shoreline as an educational space. Nxumalo's (2019) work cautions against treating

apparently natural settings as politically innocent, directing attention towards the histories of land, race and colonialism through which place-based education is made possible. The present study does not provide a historical account of these relations, its analysis approaches the beach as a situated site of access, care and permission, rather than as an unmarked common.

In conceptualising the potential of the beach, I also draw upon James Gibson's (1986) ecological theory. Gibson proposed that environments offer 'affordances' - possibilities for action - that are neither entirely objective nor subjective, but exist relationally, depending on the capacities of the organism. While originally developed within ecological psychology, affordance theory has since been revisited through relational and posthuman lenses (Ingold 2011; Rautio 2013). In this paper, I do not treat affordances as fixed properties of the beach environment, but alternatively as dynamic, relational potentials that emerge through encounters between children, materials, elements, and atmospheres. This view is resonant with compositional theory and Deleuze and Guattari's (1987) work on assemblages as I have explored elsewhere (Tembo 2024), where agency is not sited within the individual and priority is given to neither the mind nor the body, neither nature nor culture. Instead, it is distributed across human and nonhuman actors. Here, affordances are not simply action-functions of discrete objects (e.g. rocks for climbing), but what the beach becomes capable of inviting through children's engagements with the place. Whether it is a gust of wind that affords resistance to bodily movement, or seaweed that affords curiosity, the beach is approached as a lively terrain in flux - one that co-produces educational possibilities through its entangled relations. This extends Gibson's relational account through posthuman and sociomaterial elaborations on affordance theory (Barad 2007; Ingold 2011). Material-discursive is used here to signal that materiality and meaning do not arrive as separate elements that subsequently interact. What counts as a gust of wind, a piece of seaweed, a risky fire, or a camera for research is produced through the intra-actions of bodies, materials, institutional practices, pedagogical judgments and place.

This theoretical orientation sets the stage for considering how beach environments, as contingent and affective assemblages, differ from conventional early years settings in terms of what they afford children in how they come to be and become within these spaces. Research has long demonstrated that outdoor play areas can provide children with learning experiences that differ from more structured indoor nursery spaces, which often have specific areas designated for activities such as a 'home corner' or 'construction area' (Maynard and Waters 2014). Greater spatial malleability matters in providing children with ontological freedoms less tightly organised than those found in conventional nursery environments. Conceptually, Deleuze and Guattari (1987) distinguish between 'smooth' and 'striated' spaces, whereby the latter refers to practices of organisation and territorial demarcation that (re)produce more determinate - though not necessarily 'bad' - ways of being. Smooth spaces, by contrast, are more unpredictable and allow new knowledges to emerge. There is a need to remain mindful of binarising this distinction, as elements of striation and smoothness can coexist. Nonetheless, early childhood researchers thinking with these concepts have found that tending toward smoother spatial conditions may afford greater agency for play and strengthen justification for the pedagogical value of less clearly demarcated spaces (Clark 2020; Davies 2021; Hansen, Hansen, and Kristensen 2016; Lenz Taguchi 2010).

Both material things and the visual patterns and textures found within a beach environment may also offer distinct learning opportunities for young children. Coupled with the smoothness of the space, found objects with less clearly defined purposes have been shown to invite modes of play that trouble what counts as ‘appropriate usage’ (Hackett 2021). Surprise in itself has long been characterised as an important affective response (Sedgwick 2002; Stern 1985) and the beach, by virtue of its processual and indeterminate nature, may serve as a catalyst to enact such affectivities in the child. Further, akin to the agency of weather, sand as a granular material has been shown to produce ways of being that trouble individual conceptions of agency (MacRae 2020; Taguchi 2011). Sand sticks to bodies, in physical and affective ways, making itself known and implicating us in the material world. Others, too, have highlighted how a focus on materiality in early childhood environments can contribute toward more expansive ways of knowing about children’s experiences. These accounts situate the human alongside non-human objects and things which themselves ‘shape us as much as we (humans) shape them’ (Pacini-Ketchabaw, Kind, and Kocher 2017, 4). This way of knowing offers a counter to broader conventional knowledges about children’s subjectivities are formed through processual assemblages of materials, things and human bodies (Tembo 2024).

Internationally, legal and pedagogical frameworks are increasingly recognising the agency of more-than-human environments. In Aotearoa New Zealand, for instance, the Whanganui River was granted legal personhood under the Te Awa Tupua Act, reflecting Māori cosmologies that understand rivers as living kin (Duhn 2024). Such shifts resonate with the Sustainable Development Goals (United Nations 2015), particularly those promoting ecological responsibility and integrated education. These developments are reshaping how children’s rights are conceptualised in relation to place. White, Williams, and Martin (2025) illustrate this through pedagogies that invite children to worry with, rather than about, water. Similarly, Baker, Clayton, and Bragg (2021) document how Australian children experience climate-related anxiety and grief, often intensified by adults’ inadequate responses.

A compositional reading, linked to my initial aim of exploring the pedagogical value of the beach environment for young children to learn about the natural world reveals several affordances given by such spaces. Obrador-Pons (2009) paper on the *haptic* experience of the beach resonates in this context with young children as the presence of the elements and material things can affect and shape children’s lived experiences with, and learning about, the natural world. Positioned against more striated spaces typically found within conventional nursery environments, and in light of wider concerns around young children’s relationship with the outdoors, there is clear merit for children to engage in these spaces as part of the broader call for young children to remain connected to the natural world. As explored in this review, beach environments offer both spatial and material variation and distinct affective and pedagogical possibilities. Their elemental nature, unpredictability, and multisensory richness can afford children alternative modes of relating – with self, others, and the more-than-human world. Work by Duhn (2024); White, Williams, and Martin (2025), and Baker, Clayton, and Bragg (2021) suggests that such relations may be emotionally charged, ethically productive, and deeply situated within wider ecological concerns. These insights contribute to a growing body of research that repositions environmental education within early years as an opportunity for

embodied, relational learning shaped by affect, place, and material agency. Taken together, this literature positions the beach as a shoreline in process rather than a stable setting or a collection of educational resources. Its spatial openness, mobile materials and elemental atmospheres may alter how children, practitioners and materials relate, although these possibilities remain mediated by access, supervision and the histories of place. The empirical study examines how such relations were composed across six beach-school sessions, using visual material and practitioner reflections as partial records of what came to matter.

Methodology

This project engages in photo-elicitation with young children (Boucher 2018; Cooper 2017) to explore how beach spaces came to matter within their play and encounters. Photo-elicitation is widely recognised as a valuable approach within early childhood studies, for its capacity to centre children's perspectives and attend to the visual, material and affective dimensions of their worlds (Clark 2010). Work on young children's perspectives of outdoor spaces has similarly used photography, photographic elicitation and conversation to attend to what matters within place-based experience (Merewether 2015). Matsumoto et al. (2023), for instance, show how photographic documentation can support pedagogical listening through the shared interpretation of children's play.

Staff practitioners were also invited to participate in the research process and, through a post-fieldwork reflection, to situate and complicate the encounters documented through the cameras. Following ethical approval granted by Bath Spa University, recruitment occurred through purposive sampling, where I deliberately selected a nursery setting already engaged in beach school learning (Flick 2018). This approach enabled me to choose an information-rich setting as a case study. The setting is located within a city in the UK. Beach school trips had been established for the setting's older children, aged between three and five years. Approximately, ten children took part in the project across six beach-school sessions. After consent was secured from parents/carers and participating practitioners, the study followed three stages. In stage one, an initial meeting took place between me as the lead researcher and practitioners who agreed to participate. This was a chance to provide an orientation into the purpose and aims of the research and discuss the photo-elicitation methodology. It also offered an opportunity to speak with the practitioners about children's assent and the need to remain attentive to children's ongoing verbal and non-verbal expressions of willingness, hesitation or dissent. It was agreed that any visual data gathered by staff would be reviewed afterwards with care taken to ensure that children's privacy and dignity were respected.

Stage two was the research period itself. In this phase, aligned with the nursery setting's scheduled beach visits, children were introduced to the digital cameras by the staff team and shown how to use them to take pictures during their beach trips. The cameras were GoPro devices, small and rugged portable cameras that could be readily introduced by practitioners and carried by children within the movement of play. GoPro devices have been used in a range of contexts with children in recent years (Burbank, McGregor, and Wild 2018; Kucirkova and Rowsell 2019; Richardson 2022). Children were given an open brief and encouraged to take photos or record short videos of what matters to them at the beach. Practitioners were invited to take contextual images of

the wider activity where appropriate and to draw on their knowledge of particular encounters during the post-fieldwork discussion. They were not expected to produce verbatim records of children's speech, as this could have drawn attention away from their ordinary responsibilities and from the unfolding beach encounters. Instead, the visual material provided prompts through which practitioners could recall and reflect on particular events. It was explained to children in their information pack that the pictures they took, and any comments they chose to make about them, could be used within the research project. In stage three, an audio-recorded post-fieldwork discussion was held with the five participating practitioners. The group revisited the visual material and reflected on the encounters documented across the beach-school sessions.

Though valuable in research with children (L.-A. Gallacher and Gallagher 2008), participation cannot be required without risking the child's right not to take part. Children's decisions to ignore a camera, put it down, or become absorbed in other activity were therefore respected as meaningful forms of non-participation rather than treated as gaps requiring replacement. Though I anticipated that some children would be familiar with digital cameras and may be drawn to their novelty, I saw it as equally likely that their play experiences would take precedence over my request to document what mattered to them. Any practitioner-generated images were treated as contextual documentation of the wider event, rather than as proxy accounts of an individual child's perspective. Practitioners were also asked to avoid recording or photographing a child where verbal or non-verbal cues suggested that they did not wish to be included.

This research does not proceed from a position of detached objectivity. I eschew a claim to objectivity in favour of an ethical accountability that holds me responsible for the production and interpretation of data. What counts as an acceptable 'level of distance' is highly contested and often obscures the ways in which researchers are already embedded in the relational and material conditions of their work. In line with Haraway's (1988) critique of the 'god-trick', this research proceeds from the understanding that knowledge is always situated, partial, and entangled. I remain accountable for the interpretative choices through which particular events, relations and absences come to matter in this paper, including decisions about which visual material is selected, how practitioner reflections are used, and how the theoretical frame directs attention. Alternative readings remain possible; the analysis therefore makes its own grounds visible through sustained engagement with visual material, practitioner reflections, and the conditions under which they were produced.

Data and discussion

In this section, I bring visual material generated through the GoPro cameras into relation with practitioners' reflections on the encounters surrounding it. The analysis attends to how particular events came to matter through changing relations among children, practitioners, materials, technologies and elemental conditions. The visual corpus comprised 523 still images and video clips generated across the six beach-school sessions. Approximately one-tenth of these files were video clips, together amounting to around 40 minutes of footage. I reviewed the full corpus, repeatedly viewing the visual material alongside the audio-recorded practitioner discussion. Closer analytic attention was given to images and clips that

practitioners identified as significant during the post-fieldwork review, not because these accounts settled the meaning of children's experiences, but because they situated particular encounters within the conditions in which practitioners had participated. I use MacLure's (2013) notion of 'glow' to describe the affective pull or curiosity that particular images, clips and moments generated for me as the researcher. These moments were revisited, compared across the corpus and read alongside practitioner reflections, with attention to camera position, bodily movement, sound, weather, material conditions and what moved beyond the frame. They were then organised through the three compositional dimensions developed in this paper: spatial openness, mobile materials and elemental atmospheres. Practitioner reflections were therefore used as situated accounts of the conditions surrounding particular events, rather than as definitive explanations of what children felt, intended or experienced. Images are presented with limited editing to protect anonymity. Such edits do not alter the substantive content of the events represented.

The spatial affordances of the beach

Figure 1 begins with distance. Shingle occupies most of the frame, extending outwards from the camera in a broad and uneven field, while the children appear as a small concentration of colour at the point where the beach gives way to grass and sea. Their bodies are sufficiently far away for the details of play to remain indistinct, though the image holds them within a landscape of stones, open ground, vegetation, cloud and water. In this sense, the image registers a particular arrangement of movement, visibility and adult responsibility in which children could remain absorbed in their encounters with the material ground, while still being held within the reach of the practitioner's attention. Read compositionally, the image gathers terrain, distance, bodies, camera position and the partly unseen practices of supervision into the conditions through which this particular moment of play could unfold.



Figure 1. The spatial affordances of the beach.

Practitioners described this arrangement through a simple working boundary: children could move as far as they remained visible to an adult, and an adult remained visible to them. The beach therefore carried its own conditions of supervision. Sightlines stretched differently across the shingle; the uneven terrain, weather, proximity to water, practitioner knowledge of the site and children's movements all entered into decisions about where children could go and how closely adults needed to remain. Within these arrangements, the children were able to spend time at a greater physical distance from adults than would usually be possible within the nursery, and the open terrain afforded a quality of dispersal that sat differently from the designated areas and fixed boundaries of a typical indoor setting. Lianne reflected on this difference:

Other nurseries put up physical boundaries, we don't. *They're a lot calmer compared to when they're at nursery.* Children are used to being outside, but there is something different about this space. Partly, it makes a difference because there are less children, but also because they are a 'special group'. The children feel like the beach is 'just for them'. (Lianne, emphasis mine)

Lianne's description of calmness is situated within this particular assemblage, this particular beach and the staff practices that held the session together. It nevertheless draws attention to a different organisation of the adult gaze. At the nursery, movement is often gathered around rooms, thresholds, furniture, activity areas and the layered sound of many children in close proximity. On the beach, supervision was distributed across distance, sightlines and shared familiarity with the terrain. Gallacher's (2005) work is useful here, showing that children's movement is always shaped through adult judgement and institutional understandings of safety. The beach did not dissolve these relations but instead altered their texture, leaving space for forms of lingering, dispersal and absorption that were less easily sustained within the busy spatial rhythms of the nursery. The difference was also heard. The beach soundscape was composed through surf, wind, children's voices, gulls, the movement of feet across shingle and stretches of relative quiet. Jordan contrasted this with the overlapping sound of the nursery:

I think sometimes, obviously at nursery it can be sensory overload. There's lots of different voices, lots of different sounds from all the other rooms, whereas obviously when we're at beach school, it is literally them and sounds in nature that you can hear the sea sometimes. And there was one time that I went with them, and *we just sat and we closed our eyes and tried to see what we could smell. So, I was just trying to get them to be aware of what's around them.*

Brianne similarly described the beach as a 'different kind of audio environment' that was 'probably a bit calmer' for the children. The sensory, as it is used here, concerns the bodily and affective relations that gathered among children, air, sound, movement and place. When Jordan invited the children to close their eyes and notice what they could smell, the visit briefly gathered around wind, salt air, the wash of the sea and the children's stilling bodies. The invitation emerged through the atmosphere already moving around the group.

Gallagher's (2011, 2016) work on sound, space and power helps to locate the significance of this moment. Sound carries relations of attention, regulation and feeling; it shapes what can be heard, how bodies move and the kinds of response that become possible. Within the nursery, the density of voices and activity could sometimes make sustained listening difficult. At the beach, sound travelled with wind, surf and open

terrain, entering the pedagogical encounter as an elemental force that shaped where attention gathered and how the group came to inhabit the space.

The sense that the beach was ‘just for them’ also points towards a developing relation of belonging with place. The repeated journey to the shore, the shared routines of arrival and snack, and the temporary withdrawal from the nursery gathered the group around a place that had acquired significance through use. Little (2022) writes of spatial belonging as central to children’s possibilities for expression and connection with local environments, while Goelman, Pivik, and Guhn (2011) attend to the ways repeated, meaningful actions can sustain shared values. Such rituals are never innocent. They also shape the terms through which belonging is recognised, raising questions about which children, behaviours and ways of participating become most readily affirmed within the group. Read alongside the ways children play with power (Tembo and Bateson 2025), the beach school’s rituals require ongoing attentiveness to the exclusions or hierarchies that may gather around even the most generous of shared practices. The fire pit, constructed during snack time, formed one such ritual and became a focal point for material transformations that are explored in the following section.

Mobile materials and transformations

The fire pit was assembled during snack time when weather conditions permitted (see Figure 2). Children helped to dig the shallow pit, gathered around as practitioners prepared the fire, and participated in lighting it under close adult guidance. The practice became part of the repeated rhythm of the beach sessions, gathering children, practitioners, weather, fuel, food and the uneven ground into a shared event. Gabriel described the anticipation that often surrounded it:



Figure 2. Playing with fire.

They absolutely love the fires. They’re always asking me if we’re having a fire. So yeah, they love it. They love it and they like, I think the risky element of them actually coming up to the fire to roast the marshmallows in here. They’re using the, I call it Dragon sneezes, but they’re like, fire flints.

Children were, in the most literal sense, playing with fire: moving close enough to feel its heat, waiting for marshmallows to brown, watching flames rise and change, and handling the fire flints Gabriel called 'Dragon sneezes'. Soraya described discussions with the children about the 'three things that fires need': heat, fuel and oxygen. Such knowledge was developed through a material encounter in which the warmth of the flames, the texture of wood, the smoke moving through the air and the need for careful bodily positioning became inseparable from the words used to describe them. Read compositionally, the fire gathered heat, fuel, oxygen, weather, adult expertise, children's anticipation and the practical labour of keeping bodies safe. The conditions through which this encounter became possible also require attention. Fire pedagogy rests upon practitioner confidence, institutional permission, access to appropriate outdoor space and collectively held judgements about risk, care and children's capability. These conditions are unevenly available across early years settings. The affordances of fire therefore emerge through particular cultural and organisational arrangements, including the willingness of adults to remain with uncertainty while maintaining responsibility for the safety of the group.

The fire continued to matter after its flames had gone out. On another visit, the place where the group would usually settle had been used by others, leaving burnt wood and ash across the logs. The remnants of an unfamiliar fire entered the children's return to the beach as a changed material presence. [Figure 3](#) follows Kara's encounter with this ash, which moved from wood to fingers, skin and air as she explored it.

Dominant definitions of literacy in early childhood education often prioritise reading, writing and symbol recognition, practices closely aligned with school-readiness discourses and developmentalism (Brandt and Finn Menning 2024). Kara's engagement with ash enters a different register. Her hands become darkened by the material; ash clings to skin, marks the wooden surface and lifts into the air with the movement of her

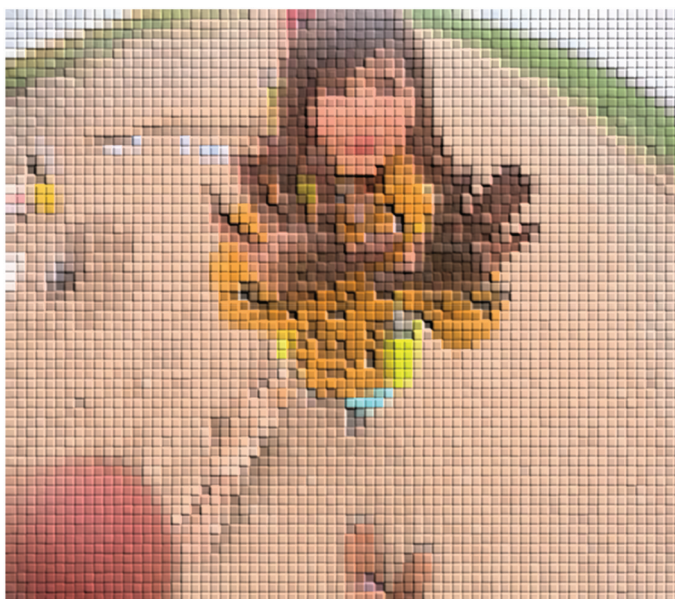


Figure 3. Ash-child encounters.

body. The encounter is communicative, though its significance cannot be reduced to a message waiting to be translated into spoken or written language.

A concurrent focus on the ash as agentic material has implications for how literacy practices are conceived. The ash participates in the encounter, sticking to skin, smearing across surfaces and dissolving into air, while Kara's movements alter its form and trace. It becomes a spontaneous invitation for meaning-making to unfold beyond increasingly instrumental and developmental discourses (Pacini-Ketchabaw, Kind, and Kocher 2017). Within this child–ash–beach relation, neither the outcome nor the direction of play was settled in advance. The sensing body took shape through contact with a substance already carrying the material history of wood, flame, weather and the previous presence of others.

The ash encounter was one instance of a wider material condition of the beach: objects rarely remained in quite the same form, or in the same place, from one visit to the next. Practitioners spoke of the children's repeated interest in lifting larger rocks to search for the small crustaceans that nested beneath them, while fossils, shells, pebbles and fragments of debris appeared and disappeared with the movements of tide, weather and other beach users. Such materials entered the children's play with their own histories and temporalities, carrying traces of geological processes, animal life, human activity and environmental change.

The setting had large tyres available in its outdoor area, yet practitioners felt that the time, space and material variability of the beach altered children's encounters with rocks and other found objects. A tyre retained a familiar role within the nursery environment; the stones scattered across the shore had no single intended use and drew children into touching, turning over, comparing, collecting and arranging. Their affordances emerged through the shifting relations among material form, bodily capacity, curiosity, company and place.

Figure 4 shows one such encounter. Children's hands and bodies gather around a temporary arrangement of stones, selected for their visible lines and placed together on a piece of driftwood. Lianne had invited the group to look for rocks marked by planar lamination, though the resulting arrangement remained dependent on what the beach offered that day: the size, weight, texture and markings of the stones; the children's



Figure 4. Ephemeral art.

capacity to carry them; the available surface on which to place them; and the shared attention of the group. The art work was ephemeral in the fullest sense. It belonged to the particular conditions of that visit and would be altered, dispersed or absorbed back into the shore after the group had left.

Rautio (2013, 404) writes that stones 'have us pick them up, feel them, close them in our fist ... [or] hold them between our thumb and forefinger'. The quotation is useful here because the stones' participation in the encounter was not exhausted by their role as resources for a planned activity. Their uneven edges, smoothness, weight and markings directed children's hands and attention in different ways, while the collective arrangement allowed the stones to become part of a provisional visual composition. Gibson's account of affordance helps to retain this relational quality: a stone may invite lifting, lining up, balancing, examining or leaving alone, according to the capacities and concerns that gather around it at a particular moment. This matters in early childhood settings where materials are often valued through their aesthetic appearance, perceived developmental purpose or capacity to support recognisable outcomes. Taylor (2013) cautions against educational relations with nature that privilege order, usefulness and knowability, leaving messier, decomposing or less easily legible materials at the margins. The beach carried many such materials. They arrived already weathered, damaged, wet, tangled, broken down or partly buried, and their pedagogical possibilities unfolded without waiting to be rendered tidy or purposeful.

Questions of value became particularly acute around seaweed. Its presence on the shore shifted from visit to visit, arriving in tangled, wet clusters after the tide and later drying, thinning out or becoming caught among stones and driftwood. [Figure 5](#) gathers children's encounters with seaweed across these changing states. The material could be soft and heavy in the hand, crisp at its edges, slippery underfoot or stretched into long strands that moved with children's bodies and the wind. Its affordances were bound to these variations.

Seaweed also carried the wider life of the shore into the children's attention. It pointed towards intertidal habitats and the forms of animal and plant life held within them, while its decomposition and movement across the beach resisted any easy division between living matter, waste and educational resource. Here, the ecological significance of the material was encountered through its texture, smell, weight and tendency to cling, tear or dry, rather than through a pre-given environmental message.

The presence and absence of seaweed, stones, ash and other shoreline matter marks the beach as an environment in process. Materials shifted with tide, weather, decomposition, human use and the movements of children themselves, drawing the group into relations that could not be fully anticipated in advance. Kohn's (2013) invitation to consider how forests think is suggestive here: beaches, too, may be approached as places where more-than-human capacities become pedagogically consequential. Seaweed invited sensory curiosity, while also requiring practitioners to remain with impermanence, unpredictability and the changing material life of the shore.

Elemental atmospheres

Weather was present throughout the beach sessions as a force that changed the bodily possibilities of the space. [Figure 6](#) was recorded in blustery conditions. The camera's low, slightly unstable frame holds children in waterproof clothing against a large grey sky, their

bodies turned towards and away from a railing that runs across the image. The wind enters through posture and movement: children brace themselves, lean, hang and release, while clothing catches against their bodies and the shingle gives uneven purchase beneath their boots.



Figure 5. Seaweed affordances.

The footage accompanying this image carried waves of laughter and shrieks as gusts gathered around the children's bodies. Weather was not an external topic introduced for the purposes of learning. It was already organising how the children moved, balanced, sounded and related to the railings, the ground and one another. Lianne's reflection located this encounter within the practical work of preparing children to remain with such conditions:

I'm a firm believer in setting children up for success when it's like 'bad weather' in quotes. Like if you give them waterproofs, then they can survive that sort of thing.

The waterproof clothing formed part of the encounter. It enabled children to remain outdoors through wetness and wind, while also changing the feel and movement of their bodies: hoods narrowed peripheral vision, trousers rustled against legs, boots pressed



Figure 6. Weathering affects.

into the shingle and sleeves extended the reach of hands. The familiar Forest School maxim that there is ‘no such thing as bad weather, only bad clothing’ carries some force here, although decisions about when weather becomes unsafe remain shaped by the location, the age and experience of the group, staff numbers, available shelter and practitioner judgement.

Weldemariam’s (2020) discussion of the early years weather calendar is helpful in drawing out what was happening here. In this familiar routine, weather may become an object of observation from inside the classroom, named, represented and organised through a sequence of recognisable signs. The beach encounters placed children within the changing conditions of weather itself. Wind was felt against faces and clothes, heard through the railings and the children’s voices, and encountered through the extra effort required to move, climb and remain upright. Rooney’s (2018) concept of weathering similarly attends to the ways young children come to know weather through their participation in its movements, intensities and effects.

Finally, at another point in the data (see [Figure 7](#)), illustrative of what I had anticipated may occur with the use of GoPro devices, play took over. The video scene opens with Charlie proudly waving their ‘paintbrush’, pulled from the ground in the wind, while holding the GoPro below in their palm, its selfie view pointed towards them. Charlie walks to an adult who proposes that the paintbrush be used for painting, to which they respond, ‘Yes! With mud!’ After some walking, the GoPro is placed upside down on the ground as Charlie uses their leaf-brush to ‘paint’ found objects with mud. Charlie then dips in and out of sight until, eventually, the camera is blown over and only the sky remains visible. Several minutes later, an adult hand enters the frame and recovers the camera.



Figure 7. Play takes over.

Play, it appears, is too important. The sequence speaks to Charlie's capacity to take up the camera on their own terms, including by setting it aside altogether. It also gestures towards a methodological humility: the GoPro, designed to capture experience, becomes caught up in the play itself, entangled within the assemblage it was intended to document. Positioned in Charlie's palm, then placed on the ground, then turned by the wind, the camera's affordances shifted with its relation to hand, mud, shingle, air and movement. From a Gibsonian perspective, it could become a device for recording, a surface, a toy, a reflection or simply something to abandon. The camera does not fail here. It is folded into the ordinary affective rhythms of play, where meaning is composed in motion rather than extracted from the child. This

moment stands as a salient reminder that children's worlds exceed the frames we offer and that research, at its most respectful, sometimes requires researchers to let the frame blur, tip, or perhaps vanish altogether.

Conclusion

This study has examined the pedagogical value of beach environments for young children through a compositional account of the relations that gathered across six beach-school sessions. Its central contribution is to understand beach-school pedagogy as practitioners' attunement to changing compositions of terrain, tide, weather, materials, bodies, technologies and responsibility, through which affordances emerge, shift and recede. The beach did not offer a stable set of opportunities waiting to be accessed by children. What became possible was shaped within particular encounters: long sightlines and uneven shingle altered the organisation of supervision and movement; a fire continued to matter as ash; stones and seaweed changed in presence, texture and form between visits; and wind altered bodies, clothing, sound, cameras and play. These encounters suggest that beach-school pedagogy cannot be reduced to taking children outdoors, providing natural materials or planning activities in a coastal setting. It involves attending to what is already gathering around the group and making judgements with, rather than apart from, those conditions. This has several implications for practice. First, practitioners might attend to supervision as a relation with terrain, sightlines, weather, proximity to water, group composition and children's movements, rather than as a fixed requirement for proximity or control. The beach did not remove adult responsibility; it reorganised how responsibility was enacted.

Second, practitioners might follow material transformations before deciding what children should do with them. Ash, seaweed, stones and weathered debris need not become resources for predetermined activities or recognisable outcomes. Their changing textures, movements, histories and capacities can become pedagogically significant in themselves, inviting children and adults to remain with curiosity, uncertainty and the material life of the shore. Third, the study has implications for research and documentation with young children. GoPro cameras did not provide transparent access to children's perspectives. They became objects to hold, carry, place down, overturn, repurpose or abandon. Charlie's camera, tipped by the wind while play continued elsewhere, shows that partial, blurred or interrupted recordings are not necessarily failures of method. They can register the contingent conditions through which children participate in research, including their capacity to direct attention elsewhere.

The study remains situated within one setting, one coastal location and a particular set of practitioner relationships, permissions and resources. Beach-school provision is not equally available to all children or settings, and its possibilities depend upon questions of access, practitioner confidence, institutional support, risk, care and the histories through which particular shorelines are named and used. Further research might examine how these encounters are shaped by unequal access to coastal spaces, by social identities and by the experiences of children whose movement, communication or sensory relations with outdoor environments differ. The beach remains a compelling pedagogical terrain

because it brings children and adults into contact with a world in motion. Its significance lies not in being an inherently liberatory setting, but in the ways its changing compositions can require educators to notice, respond and remain accountable to the relations through which learning and play take form.

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Data availability statement

The participants of this study did not give written consent for their data to be shared publicly, so due to the sensitive nature of the research supporting data is not available.

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