

Hear Water: Creative, technology-enhanced pedagogy for the arts and nature connectedness

[Case Study](#)

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Introduction

In children's education, approaching sound and music collectively through nature provides an accessible and inclusive entry point, enabling participation regardless of musical training. Such practices encourage playful exploration and help to (re)sensitise children to their local environment and wider ecosystems (Rothenberg and Ulvaeus, 2009). Experiences of nature connectedness vary depending on whether children work individually or collaboratively, and on how many senses are engaged (Moreton et al., 2019). Collaborative sound-based activities support reflection on relationships between humans and more-than-human entities, fostering early ecological awareness and relational ways of learning (Kohn, 2013).

Hear Water is an interdisciplinary project that piloted four training sessions in two primary schools in England in 2024, involving six teachers, a headteacher, a **teaching assistant** and 47 children (aged six to 11). Its novelty lies in how it brings together music, art and environmental science to help students to learn outdoors through deep listening to blue spaces, and then compose with and perform indoors the sounds that they captured. This article demonstrates how:

1. Technology can support teachers in cultivating creativity, through a combination of scientific and artistic exploration
2. Creative pedagogy relating to uses of technology in music education and arts education translates into practical, evidence-informed strategies
3. Creative pedagogy can increase nature-connectedness, health and wellbeing
4. Different entry points for embedding sustainability education into the curriculum can be provided.

Listening to blue spaces

By centring listening in blue spaces (e.g. ponds, rivers, lakes and streams), students discover new kinds of sounds, new forms of scientific noticing and deeper attunement with the more-than-human world (Hobbs, 2022). Listening becomes the engine of creativity, ethics and science learning, with wider ramifications across educational and societal contexts.

Approach

This approach rests on four pedagogical pillars:

1. Learn outdoors to listen and sense nature in new ways – using sit-spots, 'fox walking' and guided attention to sound, texture and movement (Parsons, 2024)
2. Explore nature-connectedness through games that invite choice, curiosity and wonder (Bayley and Parsons, 2024)
3. Build and use technologies (from cardboard listening horns to DIY hydrophones) to extend hearing, collect data and invite creative risk-taking (Hear Water, 2024)
4. Compose and improvise with recorded sounds, treating 'music technology' as a means for inquiry and expression (Hear Water, 2024).

Findings for creative pedagogy

Listening first changes classroom dispositions

Observations and surveys showed how listening emerged as both a musical and a transferable skill. Students were more likely to describe themselves as 'good music makers' than 'good listeners', suggesting that schools may unintentionally valorise production over perception (McCree, 2024). Reframing listening as a valued skill was considered a key outcome, helping staff and students to reflect on how improved listening shaped school experience.

Pedagogical implications

Treat listening as deliberate practice and a creative medium. Design sequences beginning with sensory attunement, progressing to guided noticing (verbal, visual, embodied) and then into sound production and composition. This strengthens musicianship while building attentional control, empathy and collaborative norms transferable to reading, science and personal, social health and economic (PSHE) education.

Creativity developed through multisensory, place-based activities

Students' language became more imaginative outdoors, as they attended to water, wind, leaves, birds and the tactile materials. Teachers reported higher engagement from quieter students. The evaluation captured child-generated metaphors - including 'daffodils singing' and 'tingling in the trees' - and graphic scores mapping 'clicking bubbles' and 'tumbling rocks' (McCree, 2024). Students enjoyed sampling a 'drip' and repurposing it as a 'bass drum', revealing intuitive sound design skills and timbral transformation.

Pedagogical implications

Prioritise open-ended tasks where nature prompts ideas and technology captures and transforms them. Graphic scores, soundwalk journals and found-sound orchestration foster precise listening and imaginative mapping without reliance on notation, widening access for neurodiverse learners while still challenging advanced students.

Technology as a conduit for agency

Building DIY listening devices and hydrophones was challenging but rewarding: students felt 'amazed', 'excited' and eager to record more. The tactile process prompted critical thinking about design ('a movable cork-ear like a deer') and practical evaluation ('we covered the bits so sound doesn't escape') (McCree, 2024). For some students, technology became the gateway to engagement, turning acoustics and wave transmission into living puzzles.

Pedagogical implication

Position students as inventor-artists. Let them iterate designs, test, document and reflect on limits and affordances. This encourages engineering mindsets (problem-framing, prototyping,

testing) and foregrounds agency, a key antidote to eco-anxiety and a driver of creative confidence.

Improvements in nature-connectedness and wellbeing

Using the Nature Connection Index (Richardson et al., 2019) and University College of London wellbeing measures (Thomson and Chatterjee, 2013), the project recorded improvements in students' scores (with caveats about sample size and timing). Students described nature using affective terms: calm, happy, peaceful, relaxed, free. Staff and children reflected on the phrase 'feeling part of nature', exposing a cultural habit of 'othering' nature and revealing opportunities for language-based reframing:

The question around feeling part of nature is really fascinating as I enjoy nature but do not feel connected to it.

Teacher comment, pre-survey

I became refocused on taking time to reflect/be in nature.

Teacher comment, post-survey

Pedagogical implication

Make language work explicit: ask students to rewrite 'nature and me' statements (e.g. from 'I went into nature' to 'I spent time with the river as a shared place') and to compose pieces that sound like belonging. Pair affective words (calm, free) with sonic choices (sustained tones, sparse textures) to embed wellbeing literacy.

Teachers benefit from immersive professional development

Pre-project staff surveys showed low confidence and limited training in facilitating creative music-making; post-project reflections emphasised value and feasibility challenges:

The main barrier is ratio... We need 1:6 in my class... and the crammed curriculum.

Teacher survey

Teachers preferred INSET-style training where they could experience the full cycle (**Figure 1**) and focus on technical details.

Pedagogical implication

Build staff capacity through immersive training and co-teaching, aligned with the project's holistic sequence. Address logistics (group sizes by the water, headphone availability, device-to-student ratios). This supports pedagogical fidelity and sustainable uptake.

How does Hear Water advance pedagogy?

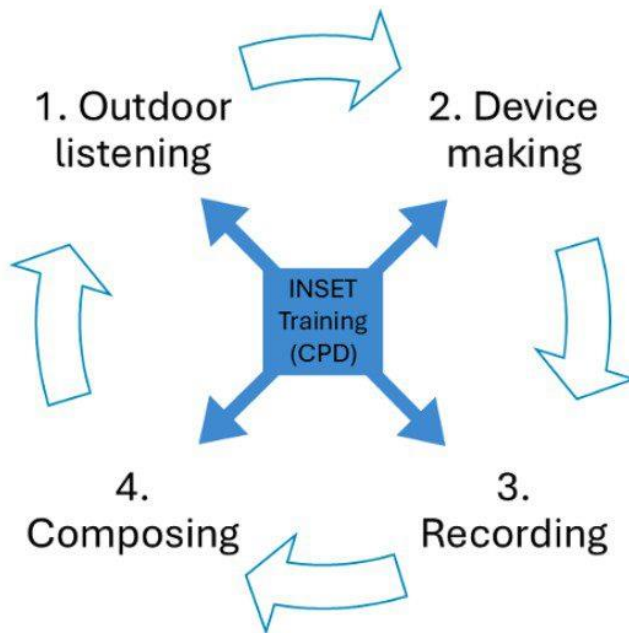


Figure 1: The Hear Water learning cycle, underpinned by continued professional development for teachers (e.g. INSET)

Nature as teacher

The project foregrounds student-built technologies, shifting learners from using tools to making them (from cardboard horns to hydrophones), blending art, design and engineering. Nature is positioned as co-composer: flows, bubbles, clicks and currents act as creative partners. Wellbeing is embedded by design - with affective states intentionally evoked - and connected to musical decisions, supporting resilience and self-regulation. Open, remixable, online resources enable adaptation across the year, with potential for incorporating live audio streams (Hinde, 2025).

Improving inclusivity

The Hear Water model increases **inclusion** through multiple points of entry and participation. Low-tech approaches such as cardboard horns and body-listening reduce barriers, while graphic scores empower emergent musicians and multilingual learners. Sensory choices (headphone volume control, indoor/outdoor workspaces) support sensory-sensitive pupils. Creative teams offer varied roles, valuing diverse strengths (including editing or organising) over performing.

Increasing agency

Approximately 85 per cent of pupils expressed interest in learning how to help wildlife. Recording underwater life and transforming it into artwork helped students to see themselves as contributors to climate narratives. Agency is rehearsed through noticing, naming, making, sharing and caring. This can be extended by partnering with environmental groups, archiving seasonal sound libraries and curating listening events in community spaces, echoing the project's 2022 screening legacy (Hinde, 2022).

Conclusions

Hear Water demonstrated that innovative pedagogy that is rooted in deep listening, nature-connectedness and hands-on technology can shift how children understand music, themselves and their relationship with place (**Figure 1**). Students revealed improved wellbeing and nature-connection, expanded imaginative language and excitement in building and composing with aquatic soundscapes. Teachers recognised its transferability and requested immersive training.

Integrating interdisciplinary objectives and documenting cross-curricular links can help to address time pressures by combining music, science, English and PSHE into coherent sequences. In a context of curriculum constraint and climate emergency, this work supports two pillars of the Department for Education's climate action plan: biodiversity and nature, and climate change and green skills (DfE, 2025).

Hear Water strengthens sustainability education by connecting learners to the natural world through deep listening and creative response. Findings show that creativity grows from listening, wellbeing increases through attunement to nature, and technology becomes powerful when used playfully and collaboratively. Embedding listening to nature within climate education can inspire creative outputs that support whole-school sustainability while enhancing teachers' capacity to integrate environmental themes across subjects.

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