

Pathways for integrating unconventional spaces of learning into schools

Unconventional Spaces of Learning in Aotearoa, New Zealand.

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Phase 4 report for the Wayne Francis Charitable Trust

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Background of researchers

Katie Earle

I come to this research as a founder and teacher of a Bush School, and as a long-time advocate for this specialised type of learning. My lived experience has inevitably shaped how I understand and present these findings — both in recognising their value and in seeing how they can be applied in practice.

Dr Judy Bruce

My background is in Alternative Education, youth development and education. I work as Senior Lecturer at AUT and Associate at the Leadership Lab.

Forest School Adventure

I heard crashing water and chirping birds
I saw algae covered rocks and seven water bugs
I felt cold as a ice brick and I felt wet
I felt in a happy mood
I wondered, what other creatures lived in the water.

- A student poem

Introduction

Traditional schooling continues to underserve many neurodiverse students or those at risk of academic disengagement. They represent a significant proportion of the school population[1], yet too often encounter schooling environments that diminish self-identity, disengage them from learning, and leave their needs unmet. These experiences, voiced consistently by parents and whānau, signal a system under strain — one no longer capable of serving all learners well. Across Aotearoa, however, a growing grassroots movement of educators, whānau, and school leaders is quietly reimagining what learning could look like. This research examined what happens when education is redesigned in unconventional ways to support learning. The research suggests that neurodiverse learners may be the shapeshifters — the ahi kā of change — that lights the way towards a system where all human brilliance can thrive.

Unconventional spaces of learning (USoLs) is a new term, coined by Bruce et al (2023) to distinguish the difference between Alternative Education which is specifically reserved within Aotearoa NZ for places of learning for disenfranchised secondary school students[2]. Instead, USoLs are flexible, non-school learning environments where education happens outside the classroom walls and is driven by choice and adaptability, rather than traditional routines for students. We use the term ‘Unconventional Spaces of Learning’ to denote the idea of not being conventional and 'spaces of learning' rather than schools. Spaces are more fluid and nuanced. Learning is also more flexible than 'schooling' and 'formal education'.

This four-phased research project began by identifying the common principles of USoLs that cater to 5 – 12 year olds, across Aotearoa NZ[3]. Provider perspectives and learner outcomes were then explored, particularly for neurodiverse students. Phases 1 – 3 make a strong case: USoLs are more than just alternatives. They offer a working model that shapes how state schools can design, support learning and resource flexible approaches for our neurodiverse students. A further extension of the research inquiry asked how could these USoLs be integrated into a state school without compromising their core strengths? And what would this look and feel like?

[1] It is estimated that one in five students is neurodiverse (retrieved from: https://www.neurodiversity.org.nz/)
[2] To learn more see https://alternativeeducation.tki.org.nz/Alternative-education
[3] Previous reports for phases 1-3 are available at: https://www.wfct.org.nz/unconventional-spaces-of-learning

Phase four research approach

The purpose of phase four was to understand what hybrid models currently exist that integrate USoL type principles and activities within school premises or nearby areas, meeting the needs of neurodiverse learners and those for whom schooling does not cater well.
Phase three indicated that many neurodiverse students are more often than not, disengaged in classroom activities, have low self-esteem ('I can't learn, I must be stupid'), experience social isolation and higher anxiety or emotional dysregulation.

We wanted to understand:

- What hybrid models exist in Aotearoa NZ schools?
- How can independent USoLs be effectively integrated within traditional school systems, while leveraging their strengths and successes?

We identified seven USoLs catering to children from New Entrance to Year 8, through the outdoor classroom Directory and by word-of-mouth from phase three participants. While our original criteria focused on state settings only, we quickly realised that some of the most compelling hybrid practices existed in spaces we had initially excluded — such as Kaupapa Māori, religious, or special character schools. These were precisely the spaces that had some of the most striking examples of hybrid practices. This presented a unique tension as the settings could offer us rich insights, but they fell outside our original parameters. This led us to include a small number of these settings that were more accessible and relevant to the broader sector, and we also included two additional perspectives to reflect the broader diversity of hybrid practice.

We talked to each USoL to explain the research objectives and invite them to recommend a neurodiverse child who has parental consent to participate. We aimed to gain a holistic, in-depth understanding of each USoL from a broad range of perspectives. These included principals, class teachers, outdoor teachers, parents, and other key individuals. All ethical protocols[4] were followed, including consent and confidentiality measures. All participants and settings were anonymised for confidentiality.

[4] Before participating, all subjects received an information sheet outlining the research process, aims, and confidentiality measures, with the option to withdraw at any time.

We conducted 18 one-on-one interviews in May and June 2025 across various locations in Aotearoa New Zealand. The interviews explored four key areas:

- Historical perspective (both developmental and contextual history)
- Learning environment (role of space and place)
- Socio-cultural aspects (child's identity, peers/ community)
- Structural sustainability (accessibility, resourcing, governance)

In the following section each case study is shared with consideration given to the four areas. A cross-study case analysis of emerging themes is also shared.

Three case studies

Case study 1: A rural town

The USoL, known as the 'Forest School', began 18 months ago. The new principal had a background in Enviro-schools and wanted to bring that approach to this school. She sent one of her teachers to an Enviro-school day in another location where he was exposed to a forest school concept. He returned enthusiastic about starting one at their school. Currently, all teachers share the role of Forest Teacher. Child 1 has been attending this Forest School since it began.

Child 1 is a 10-year-old boy, with a Pākehā father and a Dutch mother, and the only child of his parents. His mother faces ongoing health challenges, affecting her daily presence, while his father, recently made redundant, now works 10 hours a week as the caretaker at Child 1's school, allowing him to support his son's education. From 18 months old, Child 1 demonstrated intelligence and analytical thinking, as evidenced by his meticulous checking of every nut and bolt his father tightened during home renovations. He also developed a fascination with the natural world, "He liked bugs, finding huhu grubs in rotten logs, much to his mum's disgust."

When he entered school, finding the right support proved to be challenging. His kindergarten provider sought extra funding, deeming him "awkward" due to struggles with social interactions and sensory processing. An outside specialist suggested changes instead of funding, but the school refused. After an assessment, Child 1 was diagnosed with high-functioning autism, with

his dad believing there might be some ADHD involved as well. During this time, he experienced bullying in a busy, loud classroom. Eventually, his parents took him to a new school, which he eagerly embraced after one visit. At home, he enjoys swinging on his swing set while listening to music or playing his favourite video games. His dad reflects on how he blends gaming with the natural world, creating detailed, imaginative scenarios of mushroom types within a game. Meanwhile, his dad shared, “I can’t handle this [complexity]” in recognising the depth of his son’s brain.

The school, with a roll of 76 students from Year 1 to 8, supports spiritual values within its diverse community, which includes Māori, Pacific, NZ European, and Indian backgrounds. Their worldview is based on nine religious social teachings, including Kaitiakitanga (the guardianship of the environment) which is reflected in their Enviroschool model. The setting features an orchard, chickens, and a vegetable garden. They plan to install solar panels to offset electricity usage and prioritise the overall well-being of each student through the Te Whare Tapa Whā approach.

Child 1 is in a Y5 and 6 class of 18 students, some with the same teacher for the second year. The teacher focuses on relationships and creating a classroom community where students help each other. The new curriculum emphasises reading and writing before morning tea, followed by inquiry or physical education, and concludes with mathematics after lunch. The teacher has found that understanding Child 1’s triggers and providing consistent structure have been crucial for his success in the classroom.

Case study 2: A big city

The USoL, known as the ‘Outdoor Classroom’ was started by a passionate teacher. As a NE/Y1 teacher, she had noticed the difference in children’s behaviour outside versus inside. The USoL began as a trial, with a trolley and herself, but within six months it was evident it was beneficial for the students. Now in its fourth year of operation, the USoL has a dedicated outdoor classroom space between the garden and bush area and has become an established part of the school. The teacher runs the USoL on Wednesdays. On other weekdays she serves as the classroom release teacher (CRT) and runs the Outdoor Classroom for various classes. Child 2 is only in the second term of the Outdoor Classroom.

Child 2 is a 10-year-old boy with a Pākehā father and an Indian mother. He has a younger brother. In his early years, he was bubbly, though they struggled with sleep training. The family has always supported his interests, encouraging him to develop real-world learning and practical skills. He has had intense interests, such as plants and maps, and possesses a photographic memory for specific details. As a toddler, he was fascinated by agave attenuata plants, and his mother recalls their adventures in seeking them in neighbourhood gardens. At four, the kindergarten noted signs of autism in his social interactions. He was diagnosed with autism at four and ADHD at seven.

Starting school, Child 2 faced challenges, including peer conflicts and difficulties focusing, which led to frequent disputes and being sent home from school on multiple occasions. Last year was particularly tough, resulting in many missed learning opportunities. His parents noted the school's supportive approach stating, “The school has been really good.” Child 2 has a few friends but often stands out as the “slightly oddball kid.” He tends to bring up unrelated topics in conversations but has maintained some lasting friendships through family neighbourhood connections. At home, he enjoys dog walking, biking, gaming, and making repeated visits to his favourite movies during the school holidays. His parents noted, “He cannot really sit on his tablet for long; he prefers playing and being active.”

The school, with 735 students from Years 1 to 6, boasts a diverse body representing 56 ethnicities, alongside various political views, faiths, and cultures. Its excellent reputation leads to parents requesting their child attend from out of zone. The school has a strong family-focused philosophy, aiming to nurture empathetic, collaborative and creative citizens, alongside those who are numerate and literate. The principal highlighted their restorative justice approach to conflict resolution, focusing on open communication and building community relationships to prevent issues from arising. The classroom teacher encourages kindness and “bucket filling,” promoting a culture of positive communication, where students are empowered to voice their concerns and work together to find solutions when conflicts arise.

Child 2 is in an innovative learning environment (ILE) with 60 students split between two classes and two teachers. His class teacher maintains a structured environment with a focus on routine, fitness, and quiet learning, and this is Child 2's first year with this teacher. The day begins with basic facts, mathematics, and fitness activities (such as shuttle runs and squats), followed by morning tea, literacy, and inquiry-based learning. The teacher believes in channeling students'

energy positively through regular movement to enhance focus, making the morning structured and the afternoon less demanding. Child 2 attends this class daily except on Wednesdays when he goes to the Outdoor Classroom.

Case study 3: A rural town

Founded in 2022 as a charitable trust, this USoL refers to itself as a ‘Bush School’. It was created after the founder's neurodiverse son had a positive experience at a now-closed Forest School. Since the start, two one day schooling programmes have been offered: one for home-schooled children and another for kids from various schools, both held on family land. In late 2023, a partnership began with a local school after a new principal shared the founder’s educational vision. Together, they launched a regular programme aimed at children with high and complex needs, and those with leadership potential. The USoL has been operational for over a year. Child 3 has only been at ‘Bush School’ for three weeks, out of the possible 10 week term programme.

Child 3 is an 11 year old of Māori descent with a physical impairment. He has siblings and is deemed a “high-risk student” due to his complex background. Despite multiple attempts, we were unable to secure a parental interview for this case study. Child 3's Specialist Teacher provided valuable background, having known him for six years. She noted, “We’ve had to go through the public nurse to establish connections because she could enter the house, whereas we couldn’t. It has always been tough to provide wraparound services for him.” His mother has mental health challenges and refuses to answer the door. Child 3 splits his time between his mother and his nan, who often have conflicting views on his learning.

When he started school, he was referred to specialist services. Observations revealed his difficulties stemmed from sensory overload rather than physical issues, causing him to hide under tables during class. “It was extremely hard to engage him unless one-on-one or in small groups. However, when we examined his language skills, he matched expected ability. He had split skills, lacking basic social interactions but showing higher-level academic abilities. This pattern often indicates neurodiversity,” she concluded.

With a roll of 220 students from Years 1 to 8, this rural school comprises a mix of wealthy farmers with multi-generational ties, alongside 80% of Māori students from lower socio-

economic backgrounds. Twenty-two hapū contribute to the school community, and the principal describes it as “probably the lowest achieving area in the country academically.” A new principal was elected to the board of trustees nearly two years ago. Previously under ministry administration, the school had a reputation for violence, with several incidents daily, which has since reduced to one per month due to trauma-informed and restorative practices. The principal shares, “Parents don’t pay for stationery or trips; we cover those costs to remove barriers and improve connections with our Māori community.”

Child 3 is in a single-cell classroom with 23 Year 6 to 7 students. The male teacher expresses concern about the staffing saying, “There are four of us in there in a week. That's my biggest worry,” but also highlights the resilience of the students. This is Child 3's first year at the school, and his primary class teacher admits, “I have only had him for two days a week, if that. I think I have spent less than 20 full days in the classroom with them.” The teacher balances structure with flexibility stating, “Kids are meant to be playing.” Mornings start with fitness, followed by explicit writing teaching, independent writing, morning tea, then reading and maths blocks. Afternoons include physical education, art, or inquiry learning. Child 3 participates fully, except when the teacher notices he is having a tough day, “When he is okay, he can do good work. However, on hard days, I won’t force him. As long as he’s at school and safe, I am alright with that.”

In addition to the three case studies, in this research phase, we also analysed two additional USoL approaches to gain a wider range of perspectives and to reflect the broader diversity of hybrid practice.

Perspective 4: A medium city

This is a school of special character, offering one class of 30 students a nature-based learning environment (orchard, vegetable gardens, rewilding area) for three days per week, with a teacher and a teacher's aide. This is a relatively new programme that has been only operating for two terms. The programme features Year 4 to 6 students who have specifically chosen this option based on their interests. The programme balances structured classroom learning with independent, outdoor activities across their expansive grounds. Students pursue individual learning goals while utilising the natural environment for hands-on projects, such as gardening, chicken care, recycling analysis, and environmental workshops. Approximately 50% of learning occurs outdoors, with students having significant autonomy to explore their interests. Parents

frequently volunteer to lead specialised activities, such as geocaching, cooking, and harvesting from the gardens. What makes this programme distinctive is how it integrates academic learning with real-world applications. It allows student-led workshops and creates space for students to decompress in natural settings when needed, all while maintaining the core curriculum requirements.

Perspective 5: A large town

This is a school of special character, offering all 193 students in its full primary school regular access to an outdoor classroom, with class sizes ranging from 25 to 28. The programme is a key drawcard for many families, particularly those whose children have struggled in school. The deputy principal noted that the school "has become a bit of a magnet" for such learners. Their core philosophy is "learning together, through the arts, and on the land," with a strong emphasis on social learning and meeting each child at their developmental stage. This is reinforced by their "hands, heart, head" approach, which begins with practical, hands-on experiences, followed by emotional engagement ("I enjoy this"), that ultimately leads to intellectual understanding. The result is a holistic and meaningful learning experience that keeps students engaged and curious, rather than disengaged or bored.

The outdoor classroom has formally been in operation since 2016 and is central to the school's identity and their "learning on the land" philosophy. Situated on 16 acres — half of which is usable land and the other half wetlands — the site offers spaces for hands-on learning. The outdoor classroom includes covered learning spaces such as a forge, a baking oven, and construction areas, alongside a forest and a farm with cows, chickens, and pigs. Students engage with this outdoor classroom in age-appropriate ways. Every Year 4 student attends the outdoor classroom two days per week, rotating in small groups through different activities with two specialised outdoor teachers, as well as their indoor classroom teacher. Older students (Years 6 to 8) work on more complex, curriculum-linked projects such as building pulleys, levers, and small structures. Across all levels, the outdoor programme is designed to directly support indoor classroom learning. A distinctive feature of this model is its strong parent partnership. Families are actively involved, not only in volunteering but also in the physical development and upkeep of the outdoor spaces. This engagement makes the programme a shared investment between school and community.

Cross-case analysis and emerging trends

Five key themes emerged from our cross-case analysis of the three case studies in NZ. These included diagnostic labelling, social emotional learning (SEL), free play pedagogy, leadership, and future commitment.

Diagnostic labeling

Structural inequities and advocacy gaps

Structural inequities — like cost, cultural barriers, and rigid systems — exist in all three case studies in receiving a neurodivergent diagnosis, particularly for whānau Māori. A teacher shared that for their school, which serves a predominantly low-income Māori community, many tamariki "fall through the gaps" when it comes to receiving a proper diagnosis and support. He explains, "If we are looking for kids with formal diagnoses (in this school), it's going to be hard to find." Similarly, an advisor shared, "he hasn't received a formal diagnosis because that would have meant the family signing papers and undergoing a pediatric assessment…they (his whānau) were just not in a position." These two examples indicate that there appear to be some systemic structures which are likely to exclude individuals who face cultural or relational barriers to accessing support. Many educational processes rely on written documentation and formal compliance, and this can be a disconnect from Māori wellbeing models, such as the Mana Model which supports Te Whare Tapa Whā in education and emphasises the importance of a student's sense of mana in their learning (Fitzpatrick et al, 2023). A culturally responsive support structure shows a child neurodivergence as a strength, rather than a deficit. These inequities suggest a disconnect with a Māori worldview centred on connections and relationship.

In contrast, in the two other case studies, cultural disconnection was not an issue, but costs and inflexible systems were. One parent likened the experience of being stranded on a boat that keeps changing colour as assessments progress, leaving them feeling stuck. Another parent recounted the long wait in the public system before opting for a private assessment, which was still a lengthy ordeal. This highlights the difficulties families face in receiving learning support.

For some, barriers to diagnosis may be due to cultural misalignment, but for others, it is bureaucracy and cost. Regardless there appears to be a deepening of inequalities between neurotypical students and those who are neurodivergent. These disparities can have profound

and lasting negative impacts on students' academic, social and emotional development. The *Neurodiversity in Education Paper* (2023) shares that at least 50% of prison inmates have dyslexia, 25% have ADHD, and 1 in 3 autistic people are unemployed. The economic cost of unsupported neurodiversity is substantial. In Australia, for ADHD alone, it is estimated to be AU $20 billion.

The role of the diagnosis

Diagnostic labels can offer clarity, understanding and support, though they may risk reinforcing stereotypes if misapplied. One parent shared, “We were told that this movement he does is called stimming, where previously I had joked he was summoning the power of his ancestors when he played.” For this family and the school, the diagnosis served as a catalyst for acceptance and advocacy, prompting them to adapt their parenting and teaching approaches to support their child’s needs. Another parent shared an experience of their previous school, which “refused to create an Individualised Education Plan, misinterpreting some of his behaviour”. They shared how this caused additional stress on the family who had to leave work regularly to care for their child. They have now changed schools and their new school has been inclusive and accommodating, creating sensory rooms and being flexible in their teaching approach. Despite their differences, Aotearoa NZ systems are often bureaucratic, built around diagnosis, documentation, and compliance, often treating diagnosis as a precondition for support. In the process, it may become disadvantageous to families who face cultural or systemic barriers to access, exacerbating inequalities across cultural and socioeconomic lines.

Beyond the label: Rethinking neurodivergent support in schools

When schools provide flexible teaching approaches and styles, such as those found in an USoL, it can have a significant impact on a neurodivergent student’s wellbeing and inclusion, regardless of whether they have a diagnosis or not. A principal shared that in their first year, there were 14 boys, all with significant needs, in the outdoor classroom who “don’t want to wear shoes. They want to be out, moving, and interacting.” This highlights that sensory autonomy and physical freedom are integral to engagement for these students. Our research showed that the real barrier may not lie with diagnostic labelling or structural inequities but may in part be attributed to a school’s vision around resourcing in reimagining support and learning.

Socio-emotional learning (SEL)

Emotional dysregulation in classroom contexts

In all three USoL case studies, emotional regulation challenges were universal and were a common theme shared by principals, classroom teachers, parents and advisors. Students struggled with social interactions, maintaining focus, and completing academic tasks successfully. One classroom teacher described a student who would cross the room, raise his finger, and shout, “I’ll f***ing kill you. I’ll strangle your dog,” before running outside. Another student was observed pushing and punching peers to draw their attention. The teacher reflected, “You could see on his face that he wasn't angry; he just wanted to engage and showcase something.”

Nature-based setting as a calming alternative

In conventional education the role of the student is often expected to meet the requirements of standards and expectations of social norms (Bruce et al, 2023). In contrast, USoL settings offer a powerful alternative, prioritising social-emotional interaction and regulation in a calm, trusting and valued environment. Students were consistently described as more grounded and having emotional capacity in these spaces. One principal explained, “It [USoL] helps students develop and navigate skills of agency, control, and a sense of love and belonging while learning to function as part of a group.” The outdoor classroom teacher added, “It’s not my thing to squash their mana,” reinforcing the importance of honouring a student's emotional expression. Another principal emphasised that while the curriculum promotes self-regulation, many students are not yet capable of managing this independently, explaining “Therefore, co-regulation is the necessary response.”

Trusting relationships as a foundation

Strong relationships emerged as an essential element in all case studies for emotional regulation. These threads created safety, trust and inclusiveness, and this enabled students to feel secure and supported. One advisor shared, “He told me one day, ‘Whaea Megan is my class teacher today, and she’s also my Bush School teacher’.” Another outdoor classroom teacher noted, “Once students join our Wednesday programme, they stay with us until they leave the school.” These comments reflect the relational depth that exists. A parent recalled her child’s first meaningful peer interaction in the outdoor classroom, “He came home and excitedly

talked about a conversation he had with one of the kids. It was nice to see him (actually) engaging."

Shifting emotional states through safe relationships

These emotionally safe environments helped students articulate their feelings rather than act them out. One principal noted, "Especially for boys, many men have a sparse emotional landscape. They often struggle to identify their feelings, which can lead to violence." A USoL teacher described how one child, who once responded to bullying with anger outbursts or withdrawal, eventually said, "That hurts my feelings" — a profound shift in emotional awareness. Another principal echoed this, stating that when students develop tools for recognising frustration or resilience at the USoL, the skills began to transfer to other learning settings.

The neuroscience of safety and learning

Research consistently highlights the support that nature-rich environments provide for people's ability to regulate their emotions and bodies. For many neurodiverse students, the classroom environment itself can be overwhelming. Sensory overload from noise and visual input, as well as large classroom dynamics can lead to distress, distraction, or even shutdown. Added to this is the social pressure to conform and process information quickly. When these needs go unrecognised, students may be mislabeled as disruptive, when in reality they are trying to regulate themselves in environments that fail to honour their neurobiological needs (*Ways of Being*). In contrast, natural outdoor settings help activate the parasympathetic nervous system — often described as the relaxation response — which allows the body to calm down. This shift can reduce levels of cortisol, the hormone associated with stress (Frumkin et al., 2017; Roe et al., 2013; Ulrich et al., 1991). One classroom teacher observed, "At school, his meltdowns feature screaming and slamming doors, but in the forest, he is loud and free." Open spaces and reduced sensory input enable students to express themselves more safely.

These calming environments, paired with the presence of a calm, attuned adult, supported students to settle through shared sensory experiences. A bush teacher described co-regulation in action, "When I'm with a child in the bush, I might say, 'Can you hear that bird? Can you feel the wind?' Simply being present helps them process their emotions." These calming experiences contrasted sharply with the overstimulation of an indoor, busy classroom, offering both a physiological and emotional reset for these students.

Neuroscience: Why relationships matter

While strong relationships and calming environments do not resolve the root causes of emotional regulation challenges, they are foundational in preparing students to access learning. Perry and Winfrey (2021) argues that students must feel relationally safe — seen, heard, and understood — before they can engage the parts of the brain responsible for reasoning and executive function. In an environment like an USoL where relational safety is consistently prioritised, students begin to develop the emotional tools needed for self-regulation and academic engagement. Without this foundational support, students remain in survival states — fight, flight, or freeze — where meaningful learning is biologically blocked.

Free play pedagogy: Physical, practical and contextual

Holistic, play-based experiential learning was evident across all three USoL case studies, yet each differed in its structure. This contrasts with conventional education, where the teacher's role is often to instruct, direct, manage, and assess, and the student's role is to undertake tasks and activities decided by the teacher (Bruce et al., 2023). Furthermore, activities are predominantly theoretical concepts and sedentary. While these routines may provide predictability and focus for some students, for others, the rigidity of producing work in standard formats can create significant barriers especially when it does not reflect how the student makes sense of the world, connects with others and expresses what they know *(their unique Way of Knowing)*

A principal reflected on an example, where the outdoor classroom teacher guided two non-verbal Pacific Island boys in crafting bows and arrows from natural materials, sparking peer interest and encouraging the boys to share their process. This highlights how structured free play can support oral language and confidence. The principal described this curriculum, rooted in elements like earth, air, water, and fire, as “language-rich, experience-rich, inquiry-rich.” In contrast, another USoL shared a fully child-led example: students were given five minutes to collectively choose their activity, and they decided to play in the rain, later regretting the decision — this natural consequence reinforced student agency and learning through experience. The third USoL shared how each day begins with a Pūrākau (story), such as “Māui and the fire,” followed by a provocation, such as flint-fire lighting, which students could explore or choose their own self-directed play. Despite differences in structure, all three models fostered strong learner agency. This reflects the values more closely aligned with *The New Zealand’s*

Early Childhood Curriculum, Te Whāriki, where children's voices shape the learning journey, highlighting the power of authentic, responsive pedagogy.

Tensions with traditional expectations

Parents and principals may express concerns that a play-based approach at the primary school level may lack the academic structure, rigour, and consistency required for developing writing, reading, and numeracy. One parent reflected, "If we hadn't had our child, we might have been one of those more traditional parents, but now having him, we realise that he does learn and will do so in his own time." They described daily challenges of routines such as "brushing teeth is quite a battle" and noted that their child was behind at school. Similarly, a different teacher shed light, "He loves drawing, so any work I give him becomes a drawing activity." These two examples illustrate the clash between traditional teaching styles and the needs of neurodiverse learners. Yet both teacher and parent agreed that when learning is based on their strengths and interests and involves movement and sensory input, or alternative ways of learning, engagement increases immensely.

One parent shared, "When he is doing something physical, hands-on, or practical, that's really helpful for him." A principal highlighted the limitations of narrow teaching methods by noting, "Most of our teachers excel at talking and writing but have a narrow approach to teaching—a style that only suits a small group of learners." He encourages structured play explaining, "Play is a way of learning for mammals. It's how our ancestors used to do it. Children played with adults, watched, mimicked and mirrored them." However, he also emphasised the need for intentional planning, "If you just turn up without knowing where we're going, I'm annoyed, because you need to have a plan."

Cultural responsiveness and place-based learning

Cultural responsiveness was evident in all case studies through play-based learning. One principal described how self-directed play enables a natural movement away from colonial education, which has historically failed many Māori students. This approach allows students to connect with nature and share their stories beyond traditional classroom settings. One kaiako Māori noting, "The outdoor classroom naturally connects students with the land, teaching them to recognise the mana of native plants — they might not look like much, but they're still significant." Similarly, a different principal explained that the idea of, "kaitiakitanga as service." Students participate in meaningful tasks such as monitoring trap lines and removing invasive

weeds and this reinforces environmental guardianship while aligning with the curriculum. Another USoL began with a mihi and breathing exercises to build connections to the elements, followed by rākau games that encourage collaboration. The third USoL utilised daily check-ins, guided by maramataka, which helped students understand their energy levels and behaviour, demonstrating how Mātauranga Māori can provide structure and support alongside student agency.

The science of movement and learning

Neuroscience educator Nathan Wallis reminds us, “A brain that’s moving is a brain that’s learning,” and this affirms the idea that physical play enhances cognitive development. Students who engage with real-world tools like shells, sticks, flax, and loose parts, activate neural pathways connected to memory, emotion, attention, and executive function (Diamond, 2011).

This research highlights that culturally responsive, hands-on, contextual learning environments enhance academic development and promote a strong sense of identity and lifelong well-being. Play based pedagogy and SEL reflect the principles of *Te Whāriki* and emphasise the importance of carrying this approach to teaching and learning forward into primary schools through effective leadership.

Leadership

School leaders emerged as innovative visionaries, embracing new ideas to challenge traditional educational methods in the interest of their students and staff. One principal stated, “I think we have got to deconstruct the curriculum. New Zealand has fallen into the trap of siloing knowledge.” Another explains, “If a teacher comes to me enthusiastic about a project, you've got to let them fly with it.” This sharing highlights how this leadership style encourages teachers to innovate new ideas. These examples highlight the importance of strong leadership that is relational, values-driven, and open to pedagogical risk. This strong leadership ethos extended into how the USoLs were assessed and monitored.

Assessment and monitoring

Qualitative and observational methodologies were used in all three case studies to monitor student engagement. One principal shared, “Attendance rates, behavioural incidents, and pre- and post-programme surveys are monitored. As a result of Bush School attendance has increased, behavioral incidents decreased by 93%, and student surveys indicate a strong

appreciation for self-directed learning and natural environments." These results were echoed by another USoL with their principal describing how 80% of a child's success can be attributed to their level of hope. He goes on to say, "students attending the outdoor classroom on Wednesdays had hope on Monday and Tuesday, helping them feel settled, and left with a warm feeling on Thursday and Friday." Furthermore, on a larger school-wide level, another principal remarked that parents consistently highlighted the Forest School as an aspect they value and wish to see continue, irrespective of the survey's outcomes. However, while outcomes were promising, integration into the classroom and home learning varied widely.

The learning that happens at USoLs can extend into the classroom and home environments, but only when there is intentional planning to support that integration. Yet both perspectives 4 and 5 showed effective integration as well as two of the three case studies. Strong systems that link USoL with the classroom and home can create a more consistent and holistic approach. One teacher's dual role in both classroom and USoL allowed for seamless integration, such as using bird surveys and pest tallies to teach numeracy skills. Another had weekly staff meetings and biannual parent conferences which focused on students' SEL outcomes. Without this continuity, students may miss the chance to deepen their SEL or transition to other play-based learning settings. In the third case study, the classroom teacher suggested, "more collaborative planning at the start of the year to align bush activities with classroom learning." Whereas the Bush School teacher shared how the USoL was a "silo event and the principal requested students 'name what they have learned' — but without introducing rigid assessment frameworks that might undermine the spirit of Bush School."

Resilient to external pressure

Leadership that prioritises strengths-based approaches is helpful, yet there is still intense systemic pressure among classroom teachers regarding assessment and accountability. One teacher emphasised the tension he feels, "If you don't do well in reading, writing and maths…if your data doesn't do well, the Ministry's on your school's backs and ERO comes in and that's what they're looking at." In contrast, principals shared the opposite feelings, "I love ERO coming in... there aren't many people who want to talk about curriculum or pedagogy." Another principal shared, "Both our previous two ERO reviewers adored what we were doing with the outdoor classroom."

Financials that enabled the USoL

All three case studies demonstrated creative approaches to funding their USoL so they could develop equitable and culturally safe environments for all students regardless of their family income. At one low-income school serving predominantly Māori students the principal explained, “I want to make changes at the systemic level, not just dump it on the poor kids.” Higher-income families often have greater resources or can navigate funding pathways to offer their children learning opportunities outside the classroom during school hours. In contrast many low-income families encounter significant barriers that hinder their access to these same opportunities. Historically, whānau Māori raised their children in the natural environment guided by oral traditions and within a strong relational context. Learning outside the classroom, connects some of the traditional Māori pedagogy to the present day USoL ethos, and resourcing this was seen as important within the USoLs. This was a sentiment shared by a principal who noted, “colonial education models have historically failed Māori students, and Bush School is a place where they can tell their own stories and teach in spaces that are not within four walls.”

All principals have a strong, unwavering commitment to USoL pedagogy. As one principal shared, “we just find the money and the budget.” Another principal stated that this was his priority. However, another principal, while she echoed these sentiments, also shared that, “long-term funding was a concern.” One principal pursued an internal budgeting model by budgeting and integrating the USoL into core operations, thereby saving costs elsewhere. The other two looked for external funding sources, including PTA efforts, donations, grants, corporate support, and creating passive income alternatives through fundraisers or hiring school facilities. This highlights that while the USoL is prioritised in each case study, resourcing needs to be managed creatively. One principal went further and invited a shift from their schools resourcing strategy to advocacy and policy change at a systems level: “I am currently arguing with the Ministry that they should fund Bush School.” This strong leadership ethos extended beyond financials and monitoring to what this leadership felt like on the ground.

Relationships

Values such as manaakitanga and whanaungatanga, which extend to hospitality and compassion and create a sense of belonging, were at the heart of each of these case studies. A passionate lead teacher or founder, advocating for the creation of a USoL, combined with a leader who prioritised people and their ideas, was crucial to the success of these hybrid USoLs. In all three case studies relational leadership was a central component of school culture. One

principal expressed his expectation that “every adult in this school will treat every child as their own,” based on the “parent in place” concept outlined in the Education Act 1989, where teachers are encouraged to “open yourself up as a human being” and arrive early to help students connect and unwind. This care extends to staff, with the principal emphasising, “We look after our staff here. They don’t leave.”

Across all schools, relationships extended beyond staff and students into the wider community, whether through cultural initiatives or service projects. One school shared how their USoL has become a bridge builder in the community. They cited examples of engagement such as receiving council support for infrastructure and partnering with iwi on projects, and dads taking time off work to engage with their children at the USoL. Nurturing relational models within a school context not only benefits students’ SEL but also extends beyond, to family and further afield.

Future commitments

USoLs have become a core part of each of these three schools’ identities. The USoLs are highly valued for the holistic approach that addresses student engagement and development, cultural connections, and better serves the student population. As one principal noted, “it’s a no-brainer” that has become "just part of who we are and what we do now.” Across the USoLs there are different investment strategies involved. For two USoL case studies, financial investment from building the outdoor classroom to the acquisition of a 12 seater van, links to their broader school priorities and commitments to equity and access to learning that is inclusive for all students. All of the USoL programmes were well resourced and supported. As one principal noted, “We've been doing it 18 months now...I think it's entirely capable and possible” to sustain this model long-term, regardless of outside influences.

Building staff capability is crucial for the programme's sustainability, rather than relying too heavily on one passionate person. When this happens, that staff member may leave, burn out or have decreased motivation for the USoL setup, and consequently the programme falls apart. One principal noted early in the interview, “I needed to make sure that if the Forest Teacher left, this could continue.” This demonstrates a proactive approach to integrating the USoL into a collective school response by ensuring the entire staff can complete the Forest’s Teacher's unique mentoring role, health and safety responsibilities, and forest-inspired activities. These actions highlight how intentionally the programme now sits within the structure of the school and

the wider school identity. This point of succession shows clear thinking and offers insight into the possible downfall from passionate teachers. One outdoor classroom teacher hopes to replicate their Wednesday programme, yet acknowledges that her health impacts the USoLs success, "I am not sick on a Wednesday. I will come in sick because I can't bear to let the kids miss that day. I plan my absences with an outdoor teacher or teacher aide." This statement highlights the emotional toll of holding the programme together without a strong succession plan in place. Another school expressed a determination to bring the USoL programme into the school grounds. The principal explained, "if that Bush School provider fell over and died…we will create our own, featuring an orchard, native bush, and natural play areas, all informed by student feedback, Education outside the classroom (EOTC) and Te Ao Māori perspectives."

Scaling the programme and deepening the impact of the USoL were evident across all case studies. For one school that has been developing overall staff capability to be able to engage in the USoL. Their preference would be to appoint a dedicated USoL coordinator and increase the number of days students spend in the forest. Whereas the independent USoL wants to both widen their access for more schools to participate, as well as move away from term by term to multiyear enrolment for students who need that extra support. The third school aims for a five day a week outdoor classroom for a year group level that operates like a regular class. One outdoor classroom teacher shared the ongoing battle to legitimize USoL within the education discourse, "it's making it not like this ridiculously stupid idea that is just nonsense…to show that it can actually happen. I just started with a trolley, and look where we are today. You just need support."

These examples make it clear: when USoLs are embedded into the fabric of the school they succeed. When only one person holds the passion and vision, the burden can become unsustainable — there is emotional weight in leading this work. Strategic thinking is required to make USoLs part of the school's long-term identity. When schools invest collectively in staff, structure, long-term planning, and shared responsibility, USoLs can become a powerful and lasting part of a child's learning journey.

Conclusion

This final section brings together what we've learned across all phases and voices — parents, principals, children, mana whenua and researchers — to highlight the core insights and where we go from here. Throughout all four phases of this research, we have seen repeatedly that neurodiverse students aren't the problem. Often, they have been failed by structures within those systems. Neurodivergent students often struggle in traditional classroom environments, with emotional regulation and maintaining focus. Findings from this research indicate that principals and school leaders have a powerful role in advocating for more inclusive education and modelling this through USoL hybrid innovations. Parents, whānau and children thrive when support, advocacy and innovations are available and accessible.

"If we hadn't had our child, we might have been one of those more traditional parents, but now having him, we realise students learn differently."

Parent Perspective

Types of hybrids

Bruce et al (2024) share that USoLs "meet a legitimate need, provide an essential service and illuminate areas of convention that require an 'undoing'. And history has shown, for example, that progressive ideas for education (such as child-centred learning, inquiry-based learning, and democratic values) have been slowly co-opted by conventional schools". Across all our USoLs, we saw a spectrum from deeply integrated relational programmes to more siloed approaches. Yet, each USoL taught us something. USoL hybrid approaches varied from an independent provider integrated into a school to two USoLs located within a school. Despite their differences, all of them achieved positive results.

These USoLs may be forward-thinking and innovative, yet they are still limited in their reach. There are variations in the frequency of USoL sessions ranging from twice a term to weekly sessions. Some were term by term, others multiyear. 60% of USoLs had a strong integration between the classroom and the USoL environments. Two USoLs, from case studies and perspectives, had a dual teacher role in both the classroom and USoL environments, offering seamless integration between real world learning and structured numeracy and literacy goals.

One had a teacher role in the classroom and relied on volunteers and others to support students USoL learning outdoors. One USoL operated as an outdoor classroom environment, independent of the indoor classroom, but in partnership with parents and whānau through biannual parent conferences and goal setting. One USoL was a completely siloed programme, operating independently of the classroom and parent voice. This siloed programme aligns with our phase 3 findings, highlighting communication gaps and missed opportunities for integration. Bridging this gap remains essential to fully supporting and strengthening children's learning and development goals.

In the case studies from phase four, mana whenua engagement did not occur directly. In phase three there was one case study where hapu was involved and this partnership reflected a cultural alignment and mutual respect which contributed to strong outcomes that included fostering emotional regulation, confidence, and engagement among students (Earle and Bruce, 2024).

There has also been a gender imbalance in the research participation. In the last two phases of the research, only boys have been identified by a USoL provider, raising questions regarding the inclusivity and social barriers for those of other genders. Further research is needed to determine this systemic blind spot: for example, what might prevent girls from participating equally in a USoL, and how can the design or delivery be adapted to support their inclusion?

Another enduring question remains: what are the longitudinal effects on a neurodiverse child who attends a USoL once a week for the duration of their schooling and how does this impact their mana and self-efficacy?

"For our students in the outdoor classroom on Wednesdays, they had hope on Monday and Tuesday, helping them feel settled, and left with a warm feeling on Thursday and Friday."

Principal Perspective

Diagnostic access is a form of privilege

In all four phases of the research parents have identified that long waitlists, high costs and limited access to culturally appropriate diagnostic services are structural barriers that make diagnosis for neurodiverse children difficult, and even more so for Māori. When families were actively engaged with their child's learning outcomes, they were in a better position to advocate for their child and navigate appropriate support systems and resourcing, despite structural inequities. Many people assume that diagnosis for ADHD, dyslexia, dyspraxia and other neurodiversities are widely accessible, but in reality, it depends on money, time and confidence in navigating the system. Without an appropriate diagnosis children might be labelled as 'disruptive' rather than supported or understood. Case study 3 made this hidden inequity particularly visible, as the advisor explained, "I don't think he's had a beneficial diagnosis because again, that would've meant the family to sign papers and to go through a pediatrician and all those kinds of things. And they just weren't in a position. And I don't think they still are in a position where they could actually track that through."

Throughout this research, case studies of hybrid USoLs have demonstrated the value of programmes that align with Matauranga Māori. This contrasts with the education system that continues to disadvantage Māori through a cycle of discrimination and marginalisation (*He Whakaaraara,* 2024). Marginalising Māori worldviews leads to misinterpretations. 'Disruption' might be a child's response to an environment that does not honour their unique *Ways of Knowing* and *Ways of Being*. It is recommended that if a diagnosis has to happen, there be universal access to diagnostic testing that is affordable, culturally appropriate, and has a shorter time frame. It is recommended that this diagnosis process be codesigned with Māori and neurodiverse communities. Yet, perhaps the question is, do we really need to diagnose our students to make changes in our educational practice and systems?

"All of our kids last year in Bush School were high risk, you saw 'em at school, they were a problem. You take them out to Bush School, and they're no longer a problem. They're not the problem. The system's a problem."

USoL founder's perspective

The curriculum: Social emotional learning (SEL) and play based pedagogy

USoL environments consistently supported SEL by offering calming, relational, sensory rich learning areas. A play based approach to learning, whether structured or child-led, enhances confidence, language development and student agency. From a neuroscience perspective, physical play and interaction with real world materials stimulate brain pathways associated with memory, executive function and learning. Monitoring data within one USoL showed a reduction in behavioural incidents at school and an increase in school attendance and engagement over time. This finding indicates that when relational safety and co-regulation are intentionally prioritised, students can re-engage in learning, particularly neurodiverse students who have difficulty focusing or experiencing dysregulation in a classroom setting.

Despite strong evidence that co-regulation is critical for learning, not all USoLs in this study demonstrated a clear understanding of this principle. Two USoLs provided specific examples, such as teacher-led breathing exercises in moments of attunement following emotional dysregulation. The third case study discussed ‘managing behaviour’ more generally, without describing how adult regulation supported student regulation. This suggests two ideas: co-regulation may be occurring implicitly, even if it is not explicitly named. Alternatively, there may not yet be a strong understanding of how a teacher's nervous system regulation impacts students. When teachers are dysregulated themselves, it can lead to them having angry outbursts, increased reactivity to minor issues, and challenges in maintaining a calm and focused demeanour. Teacher's dysregulation can lead to student stress, anxiety, and difficulty engaging with learning. When teachers understand and practice nervous system regulation techniques, they can create a classroom environment where students are better able to focus, learn and manage their emotions. We need our classroom environments to be safe spaces where students feel connected and ready to learn. Previously, in phases 2 and 3 of the research, this topic was discussed implicitly but not explicitly addressed, raising questions about whether independent USoL providers and teachers have reflected on this for themselves in everyday practice. Have they explored their own vulnerabilities to know their own relational and behavioural patterns of responding? Only by doing so, can they model healthy nervous system regulation effectively with students.

School leadership

For USoL to thrive in schools, relational leadership and vision driven principals play a central role. Relational leadership was prioritised over behavioural compliance, creating a rich school environment where wellbeing and inclusion were key features. Principals not only shared their vision, they also role modelled and embodied values of manaakitanga and whanaungatanga, where students and staff felt seen and valued, and two schools treated students "like their own." These are similar 'guiding care' values that USoL providers shared in phases 2 and 3 of the research, drawn from founder philosophies, provider practices, and parent/whānau aspirations. While these values were central, each state school approached funding differently, often without consistent system-level support. Leadership requires creative funding strategies and staffing solutions to make USoL sustainable and accessible.

"I also believe that schools can bloody pay. Our school doesn't get lots and lots of money. Parents, the kids don't pay for stationery, they don't pay for trips. We pay all of that. We want to remove barriers. So if we can do it, I think a lot of schools can do it. I think it becomes a cop out otherwise."

Principal perspective

Three principals (from 1 case study and the 2 perspectives) integrated the USoL into core budgets. In contrast, two principals secured funding from grants, corporations, and the PTA. One school trained other staff to reduce their over-reliance on a single teacher. Financial resourcing and over-reliance on a single teacher may create programme vulnerability. This example highlights a key challenge: when funding might be hard to come by and staffing is overly dependent on one individual, USoL programmes become vulnerable to disruption. Further research is needed to understand the systemic conditions required to sustain USoL programmes over time, beyond the energy of one passionate teacher. There is also a need to better understand how external funders such as philanthropic organisations or corporate sponsors can bridge the gap when the Ministry of Education funding doesn't cover what is needed — without creating dependence. These two themes have been recurring throughout the four stages of research. USoLs often begin with a passionate teacher. However, without long term sustainability of building wider staff capability and investing in long term strategies, continuity remains fragile.

Call to action

What began as a question, *how could USoLs be integrated into schools?,* has now been answered in many ways. **We now know too much to do too little.** The findings from this research over three years, has given us not just insights but a pathway forward. USoLs are a vital pathway alongside classroom teaching. USoLs support emotional regulation, engagement and learning, especially for our neurodiverse learners or those who find school challenging.

We need to redesign learning environments better to support teachers and to put our neurodiverse students and whānau voices at the centre. If we want greater success and engagement in our schools, we must co-design equitable systems that enable all learners to thrive ─ not just the neurotypical or the well-resourced learners. Below are some key recommendations for schools already running a USoL. These are initial steps that schools can take to further embed and scale their USoL sustainably.

Create space for whānau and iwi voice in programme design and evaluation, especially for those with neurodiverse children, to ensure relevance, accessibility, and long-term support.
Integrate USoL into the classroom so learning isn't siloed or disconnected.
Build collective staff capability and establish succession plans, so programmes continue beyond a single teacher or principal.
Expand access, especially for students experiencing dysregulation or disconnection from school.
Share your knowledge in a range of ways such as hosting visiting days, creating local networks, mapping local providers, or organising regional workshops or conferences to foster collective learning and share best practices.

And if you're beginning this journey — as a parent, student, principal, USoL provider, iwi member or policy make — see the appendix for further ideas. A How To Guide is being developed with practical steps to support design and implementation. This will be available on the Wayne Francis Charitable Trust website. Now is the time to share, support and scale. Let us come together to reimagine what education could look like for our neurodiverse learners and for those who struggle with school. We now know too much to do too little ─ your voice, your lived experience, and your leadership matter. We owe it to our children to come together collectively, to advocate and redesign better systems within our schools.

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Appendix

Recommendations for various stakeholders and interested parties

Action for communities of practice	**Action for school leaders and ITE providers**
Advocate for funding of proactive, relational alternatives. Advocate for place-based, inclusive outdoor education with your school board. Look for Little Kiwi's Nature Play website to support child-led learning, such as case study 1 and 3. Look for John Lawry's The Outdoor Classroom Network (Artisan Pathway) to support structured play-based learning, such as case studies 1 and 2, and perspective 5. Attend the Nature Education Conference. Join the Trauma Informed Educators NZ Facebook group Join the Neuroscience and Trauma informed Network Aotearoa Facebook group Subscribe to Jase Williams (Ngāti Tamaterā) Instagram or Substack Read Dr. Bruce Perry. Dr. Dan Siegel. Mobilise communities of practice to support practitioners and experts	<u>School leaders</u> Trial a USoL for one term for those neurodiverse students, those most-at-risk. If you'd like to see how these findings can be applied in your school, the companion "How to Guide" walks you through 23 practical steps for designing and running a USoL. Partner with existing USoL independent (UsoL) providers to build capacity within your school. <u>Initial teacher education providers</u> Train teachers in nervous system regulation, along with sharing positive learning strategies for neurodiverse students through daily classroom routines. Offer a teaching unit on 'creating USoLs in schools' 6-10 week block as a way of building teacher capability and understanding.
Action for whānau/families	**Action for UsoL practitioners**
Share this report with principals and others. Advocate for your community voice in a USoL creation.	Read the conclusion of this study: Transference and Countertransference in Teachers Learn to become aware when your nervous system is dysregulated. Apply co-regulation nervous system responses so students feel safe. Partner with your local school and share your offerings. Find ways for classroom integration.

These small actions, taken together, can start the process of creating systems change. Choose what feels possible and know your contribution matters.