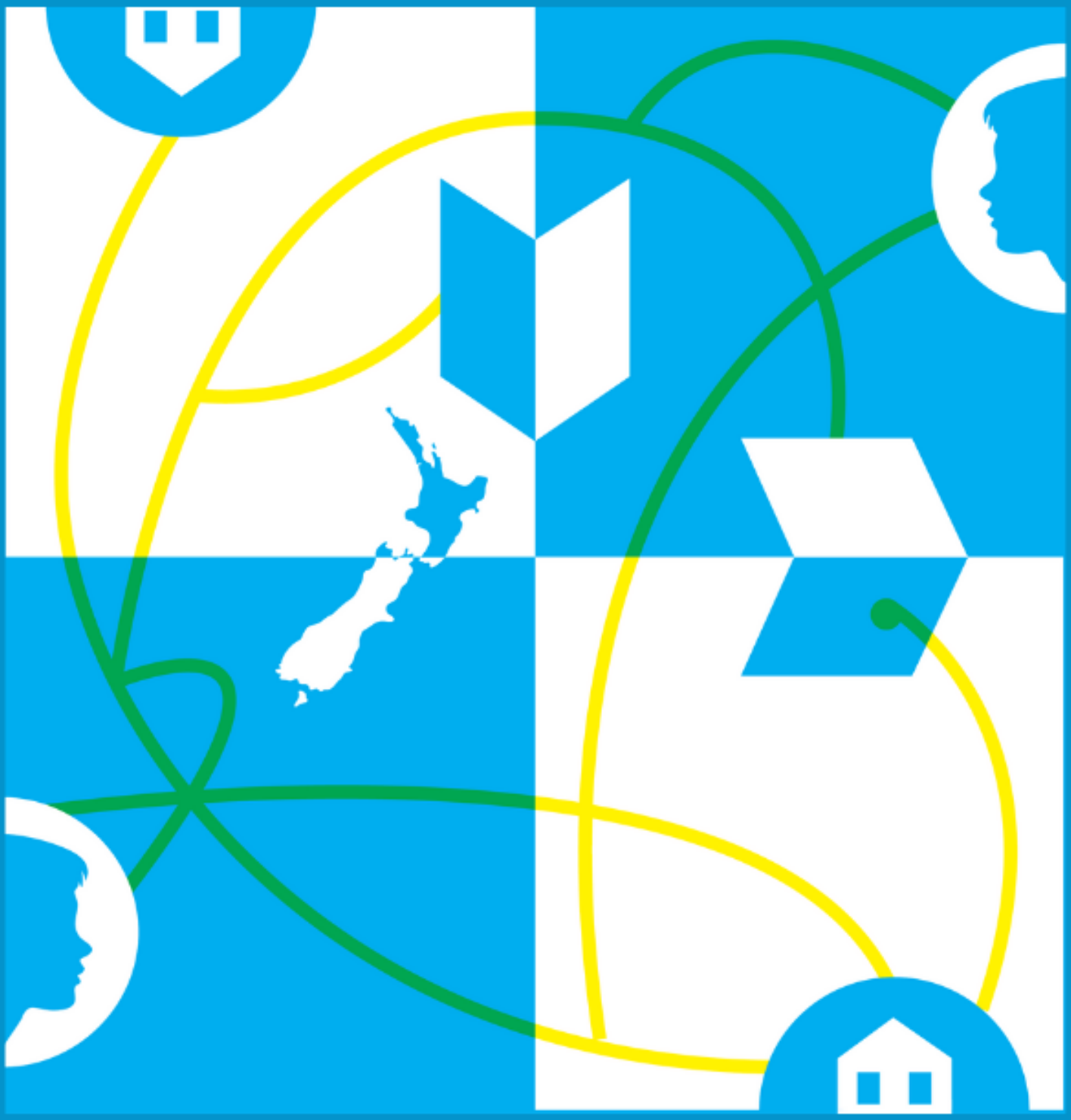
UNBOUNDED LEARNING

A ROADMAP FOR A FUTURE FOCUSED EDUCATION ECOSYSTEM IN AOTEAROA NEW ZEALAND

MIchael Barbour
Derek Wenmoth



Cover Design Credit: Greta Menzies – **https://www.gretamenzies.com/**

This report is a compilation of previously published material from Barbour and Wenmoth (2024c, 2025).

Barbour, M. K., & Wenmoth, D. (2024c). An exploration of the state of distance learning in New Zealand's school sector. In *Proceedings of the Flexible Learning Association of New Zealand Conference* (pp. 1-13), Auckland, New Zealand. https://flanz.org.nz/wp-content/uploads/2024/09/flanz-proceedings-v9-spa-min.pdf

Barbour, M. K., & Wenmoth, D. (2025). Reimagining learning: Four pillars of a future education ecosystem. *Journal of Open, Flexible, and Distance Learning, 29*(1), 12-49. https://doi.org/10.61468/jofdl.v29i1.695

Acknowledgements

Let us begin by thanking the Education Partnership & Innovation Trust, the College of Education and Health Sciences at Touro University California, and FutureMakers for their generous support and sponsorship of this research. A special thank you goes out to Flexible Learning Association of New Zealand for hosting the broader project website.

About the Authors

Michael K. Barbour is the Assistant Dean for Academic Innovation and Integration and a Professor of Instructional Design for the College of Health Sciences at Touro University California. He has been involved in K-12 distance, online, and blended learning as a researcher, evaluator, teacher, course designer, and administrator for over two decades. Michael's research has spanned the globe with a particular focus on the effective design, delivery, and support necessary for students to be successful in these flexible learning environments. His involvement in distance and virtual learning in New Zealand began in 2008, and has included presenting keynotes and other papers at Flexible Learning of New Zealand conferences, several national reports, and serving on the boards of multiple Virtual Learning Network programmes.

Derek Wenmoth is the founder of FutureMakers which he established after stepping back his position as Director, eLearning at CORE Education, a not-for-profit organisation providing professional learning, research and consultancy services across all parts of the education sector in New Zealand. Derek has been a teacher, principal, teacher educator, distance educator and education policy writer in a career spanning more than four decades. He helped establish the Virtual Learning Network in New Zealand in the mid 1990s, was the eLearning manager at Te Kura (New Zealand's Correspondence School) where he oversaw the transition from correspondence to online activity, and was awarded a life membership of the Flexible Learning Association of New Zealand in 2016. He has been involved in providing strategic advice on flexible and online learning to the Commonwealth of Learning and departments of Education in a number of international contexts.

Table of Contents

Executive Summary 3
Introduction 7
Background Context 8
Methodology 15
An Idealized Education Ecosystem 18
An Ideal Ecosystem has Student Agency and Choice 18
An Ideal Ecosystem is Equitable and Inclusive 22
An Ideal Ecosystem is Cohesive and Coordinated 25
An Ideal Ecosystem is Innovative and Future Focused 32
Recommendations 37
Leadership/Policy 37
Resourcing/Funding 38
Infrastructure and Systems 40
Teacher Roles 41
Accreditation 43
Potential Immediate Steps and Long-Term Actions 44
An Ideal Ecosystem has Student Agency and Choice *45*
An Ideal Ecosystem is Equitable and Inclusive *48*
An Ideal Ecosystem is Cohesive and Coordinated *50*
An Ideal Ecosystem is Innovative and Future Focused *53*
Conclusions 56
References 60
Appendix A 67

THIS PAGE IS INTENTIONALLY LEFT BLANK

Executive Summary

This report examines the development of an ideal educational ecosystem that seamlessly integrates distance and in-person learning in Aotearoa New Zealand's school sector. Drawing from a comprehensive national evaluation of distance learning programs and extensive stakeholder engagement through interviews and focus groups with distance learning leaders, current and former open, flexible, and distance learning stakeholders, essential characteristics and actionable pathways needed for educational transformation were identified.

The research suggested four fundamental characteristics that define an effective integrated learning system, for which the authors present a comprehensive roadmap that balances immediate implementable steps within current frameworks with long-term transformational goals requiring significant policy and regulatory reform.

An ideal ecosystem will make provision for student agency, enabling greater choice and flexibility on the part of the student.

1. Introduce more flexible course selection processes that allow students to choose classes aligned with their interests and future goals.
2. Create mechanisms for students to have consultative conversations about their learning pathways with educators who act as facilitators rather than instructors.
3. Develop mixed learning models that combine virtual and in-person experiences
4. Create opportunities for students to engage in hands-on learning across different sites.

An ideal ecosystem is equitable and inclusive, a principle that resonates strongly within the context of education.

1. Improve technology access for all through initiatives such as:
    a. comprehensive device distribution programmes that consider the full context of families' needs.

b. provision of support systems to help families with technology setup and ongoing technical assistance.

c. ensuring programmes that provide devices also address related needs like internet connectivity and electricity costs.

2. Establish mechanisms to ensure students' basic needs (i.e., food, warmth, social connection) in both physical and virtual learning environments are identified and support provided.

3. Create hybrid models that maintain access to school facilities for social connection and basic needs while offering flexible learning options.

4. Provide targeted professional learning development (PLD) to help teachers effectively support diverse learners in virtual environments.

5. Create resource-sharing networks between schools to maximise access to quality teaching across geographic areas

An ideal educational ecosystem is cohesive and coordinated.

1. Implement common learning management systems across providers.

2. Create shared protocols for data exchange between institutions.

3. Ensure compliance with safety standards (e.g., Safer Technology 4 Schools).

4. Establish consistent digital tools and platforms to reduce barriers for students moving between providers.

5. Develop clear guidelines for technology usage across different learning contexts.

6. Begin harmonising regulations between distance and in-person learning.

7. Establish common frameworks for:

a. class size ratios

b. attendance tracking

c. credit granting

d. assessment practices

8. Introduce immediate professional development in digital pedagogy.
9. Provide PLD programmes for existing teachers in online and blended learning.
10. Establish mentoring networks between experienced online educators and newcomers.

An ideal ecosystem in education is innovative and future focused.

1. Take steps to move away from synchronous-dominated models, including:
    a. supporting schools in developing quality asynchronous learning options
    b. creating flexible scheduling frameworks that move beyond fixed timetables
    c. developing guidelines for blending synchronous and asynchronous learning effectively
    d. providing resources for schools to experiment with different delivery models
2. Promote innovative design approaches by:
    a. training teachers in innovative pedagogical approaches beyond 'Zoom school'
    b. developing capacity for designing effective asynchronous learning experiences
    c. creating communities of practice for sharing innovative teaching approaches
    d. supporting teachers in developing skills for true online/hybrid teaching (not just face-to-face teaching online)
    e. establishing mechanisms to identify and share emerging best practices
    f. creating 'innovation sandboxes' where schools can safely experiment with new approaches
    g. providing seed funding for schools willing to pilot new learning models

Additionally, the stakeholders identified five critical areas requiring immediate attention to achieve this vision (i.e., leadership and policy reform, sustainable resourcing and funding models, enhanced infrastructure and systems coordination, redefined teacher roles and professional

development, and improved accreditation frameworks for distance learning providers). However, the authors acknowledge that many participant recommendations were influenced by organizational self-interest rather than systemic transformation needs.

This study emphasizes the critical need for comprehensive educational transformation in Aotearoa New Zealand's school sector, requiring coordinated changes across policy, teaching methods, and technology infrastructure. Success will depend on investing in professional development for educators to embrace flexible, student-centered approaches while creating integrated technology platforms that support both remote and in-person learning. Equity remains paramount, ensuring all students can access and benefit from educational opportunities regardless of their circumstances. This vision will require commitment from all stakeholders to build a responsive system where students can navigate fluidly between learning environments based on their individual needs and interests.

Introduction

The history of distance learning in the New Zealand school sector began with the creation of The Correspondence School in 1922. Much of that history throughout the twentieth century focused on the growth and development of that institution, which is now known as Te Aho o Te Kura Pounamu (Barbour & Wenmoth, 2024a). Near the end of the twentieth century a series of virtual learning programmes were established, and over the past 30 years those programmes increased to more than 20 unique entities, before rationalizing into two main non-profit programmes (Barbour & Wenmoth, 2024b). While the New Zealand school sector possessed this rich history of distance learning practice, the mass closure of schools necessitated by the COVID-19 pandemic resulted in a haphazard and lackluster emergency remote learning response by brick-and-mortar schools (Wenmoth, 2021a).

One of the outcomes of the pandemic experience has been a series of examinations and explorations from individual practitioners and school leaders to a Royal Commission – and everyone in between – on how to leverage the potential of digital learning to build a more resilient future education system (e.g., Blakely et al., 2024; Wenmoth, 2020a, 2020b, 2020c, 2020d). Building on these efforts, as well as earlier research that focused more specifically on reforms to the administration of distance/virtual learning in New Zealand (Barbour, 2011; Barbour & Wenmoth, 2013; Wenmoth, 2012). The study described in this article was designed to envision a post-pandemic school system – an idealised vision for what education could be 10 years, 25 years, 50 years from now.

Background Context

The history of distance learning in Aotearoa New Zealand schools sector is long and storied. The Correspondence School, established in 1922, began with just 100 primary students and handwritten lessons. The school quickly expanded, reaching 720 primary and 50 secondary students by 1928, and growing to approximately 2,000 students by the 1930s (Woods, 2022). During this period, the school introduced educational radio broadcasts, which proved crucial during World War II and the 1948 polio epidemic. By the 1970s, the school had diversified its delivery methods, using radio, telephone, and mail to serve primary and secondary students in rural areas. The institution continued to evolve technologically, piloting instructional television in 1981 and eventually transitioning to virtual learning platforms.

It was during this period that efforts began to envision a way that these innovations could be included as part of the mainstream school system. Beginning with the Consultel Report, formally titled *The Use of Telecommunications Technologies for the Enhancement of Educational Services* (Buckrell et al., 1992), an exploration of how telecommunications' potential for interactive learning could be leveraged within the Aotearoa New Zealand school sector. The report identified two critical challenges in the education system: equity and cost, recognising that not all New Zealanders had adequate educational access and traditional education was financially challenging to expand. The report recommended exploring the latest distance learning technologies of the day as potential solutions. Its key recommendations included (a) restructuring funding mechanisms to support distance learning technology providers, (b) establishing a working group to assess educational needs, and (c) providing targeted support for broadcasting, teleconferencing, and emerging

computer-based communication technologies like email and online databases. Upon receipt of the report the government of the day chose to pursue the ideas outlined in (c) above, but through inviting business partnerships to support these things rather than fund them directly. Among other things, these partnerships resulted in the establishment of an audioconferencing bridge and provision of specialist hardware to schools that enabled the establishment of the first iteration of the Virtual Learning Network (VLN).

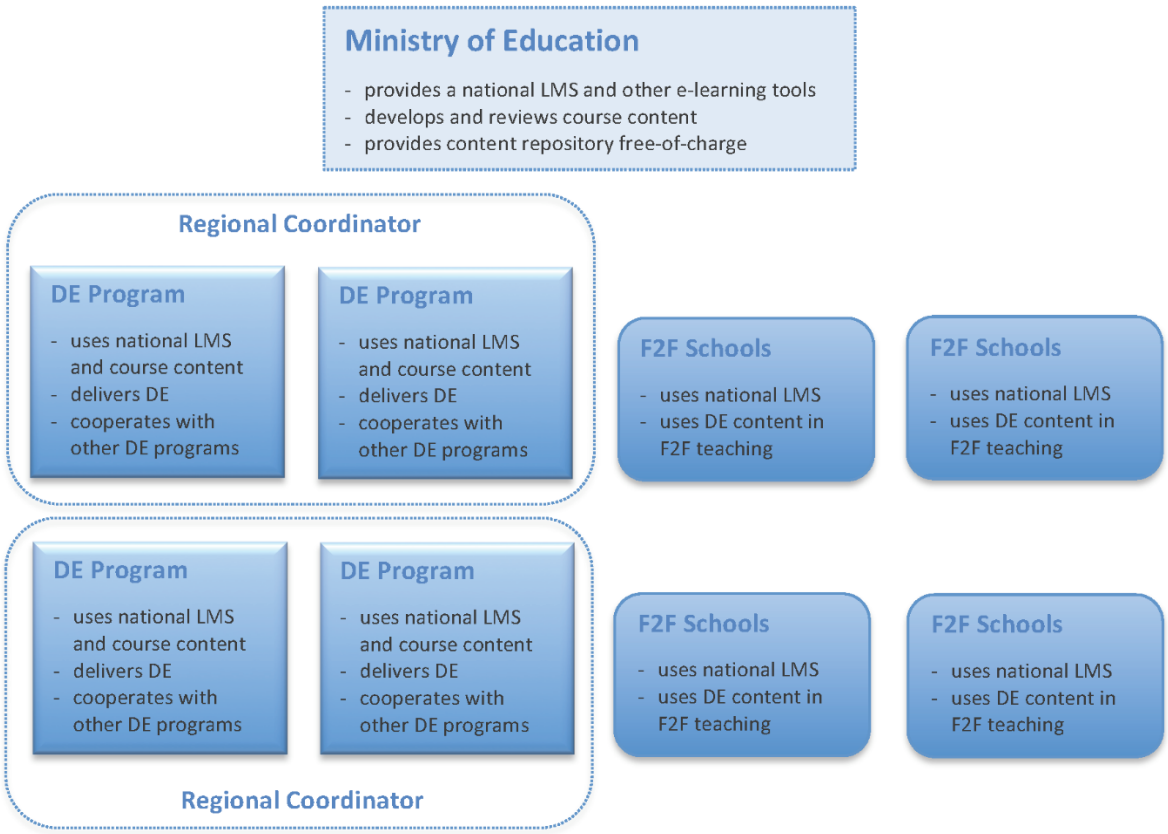
The advent of virtual or digital tools marked a significant technological shift in Aotearoa New Zealand's distance learning landscape. Using funding from the Ministry of Education, the Correspondence School established an e-Section to explore online delivery and virtual learning systems (e.g., video conferencing platforms) in the late 1990s and early 2000s. Additionally, the Kaupapa Ara Whakawhiti Mātauranga cluster was pioneering in using video conferencing to address the shortage of Māori-medium subject specialist teachers (Waiti, 2005). Other notable e-learning clusters like FarNet in Northland and OtagoNet in Otago followed, initially focusing on professional development and collaborative learning before expanding to distance education. By 2009, the VLN had grown to approximately 20 individual e-learning clusters, brokering over 160 online courses across 252 schools, with 1,401 student enrolments taught by 154 distance or e-teachers (Roberts, 2009).

The Ministry of Education played a crucial role in supporting these initiatives, thereby transforming the landscape of distance education in Aotearoa New Zealand (see Barbour & Wenmoth, 2024a for a more thorough history of distance learning in Aotearoa New Zealand). The Consultel Report was one of the first to present a forward-thinking approach to addressing the limitations of the Aotearoa New Zealand school sector through technological innovation – but not the last. Shortly after the advent of the VLN, Barbour

(2011) proposed an organisational approach to school sector distance learning where the Ministry of Education played a central coordinating role by providing access to synchronous and asynchronous e-learning tools and developing a free national content repository (see Figure 1).

Figure 1.

Organisational structure recommended in Barbour (2011)



(Barbour & Wenmoth, 2013, p. 10)

This approach would have allowed the Ministry to support both distance providers and traditional face-to-face schools. Regional coordinators would be funded to facilitate collaboration and cooperation between the VLN and other providers, which would continue to operate to address local geographic or thematic educational needs. The approach recommended a rationalising and consolidating of the existing VLN programs, which would

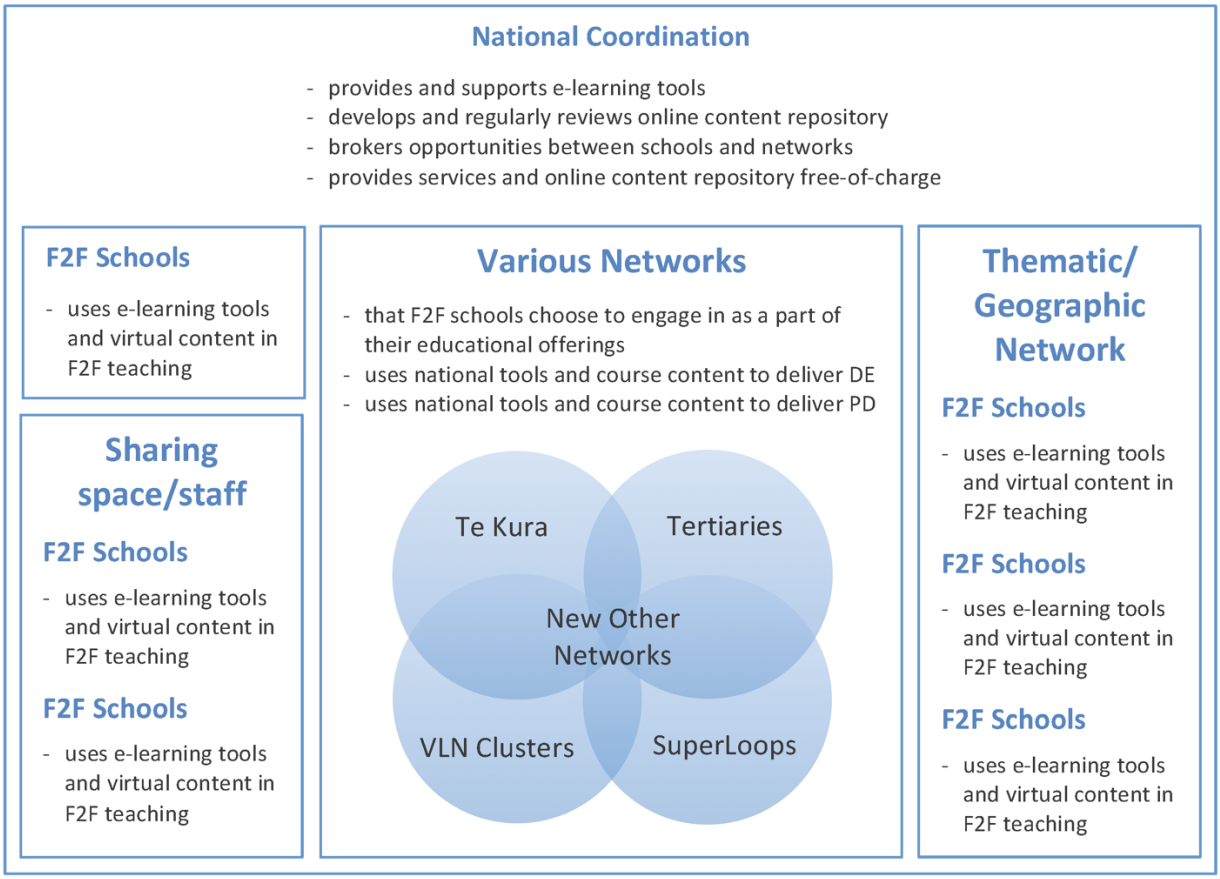
reduce the number of small, geographically focused groups to create a more efficient and interconnected distance education ecosystem. This approach aimed to enhance educational accessibility, resource sharing, and collaborative learning across different regions and educational contexts.

Around the same time, and prompted by an impending request for funding from the Ministry of Education funding, the VLN-Community (VLN-C) commissioned a business case to examine its future organisational structure (Wenmoth, 2012). Three potential models were proposed: (1) establishing the VLN as a Ministry of Education business unit, (2) creating an independent self-funded business, or (3) forming a professional organisation focused on representation and advocacy. The second option – establishing an independent, self-funded business unit operating as a 'network of networks' – was deemed the most robust approach, with potential funding sources including membership fees and service brokerage. However, this option could prove the most challenging to implement due to the members' lack of experience in establishing such a structure and the organisation's longstanding dependence on Ministry of Education funding.

The following year an effort was made to consolidate these two visions (Barbour & Wenmoth, 2013). The proposed organisational structure for virtual learning in Aotearoa New Zealand envisioned a national body responsible for providing e-learning tools, maintaining a free online course content repository, and offering brokerage services (see Figure 2).

Figure 2.

Organisational structure recommended in Barbour and Wenmoth (2013)



(Barbour & Wenmoth, 2013, p. 13)

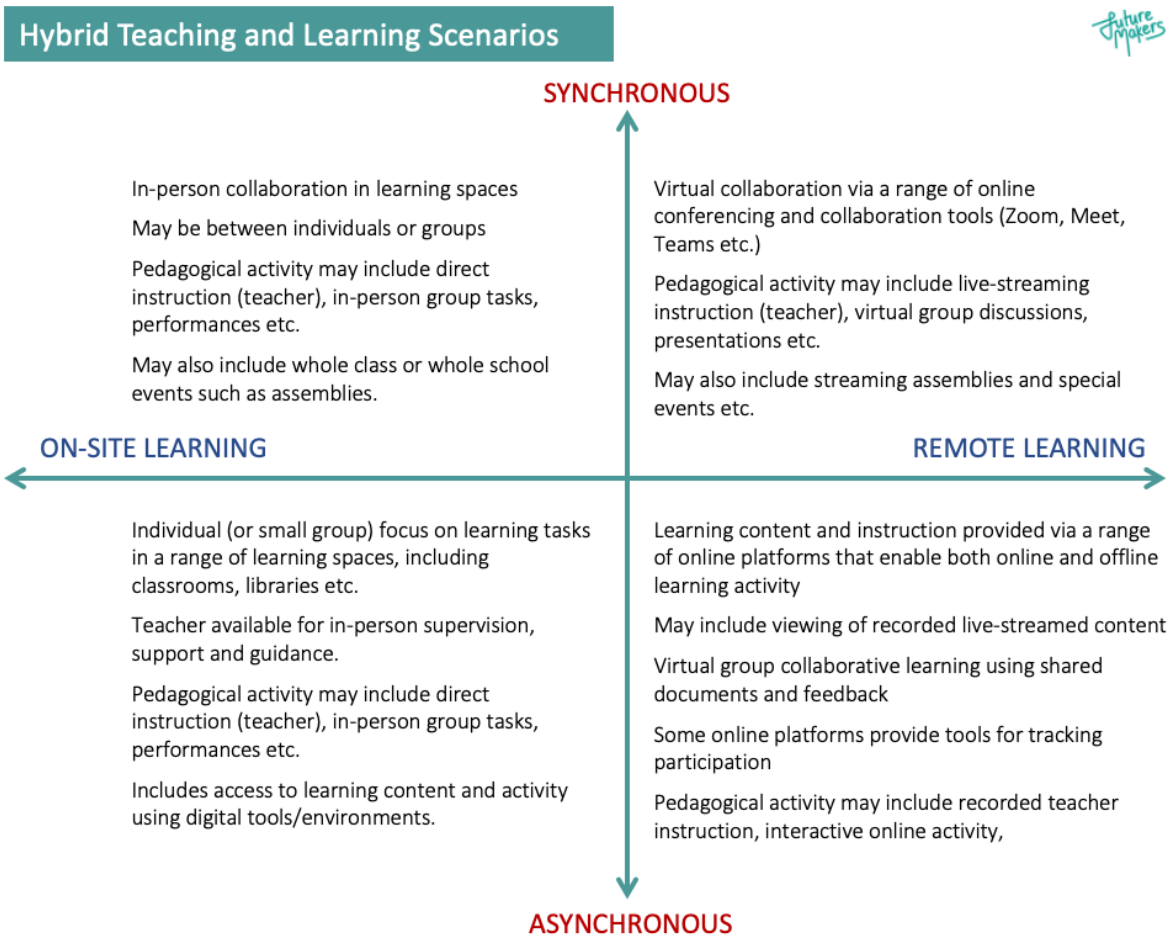
This model would have enabled existing distance learning providers to specialise, allowed schools to use virtual learning tools in blended formats, and facilitated creative scheduling and collaboration across institutions. Schools would have been encouraged to belong to multiple geographic and thematic networks, potentially transforming traditional governance models. The structure challenged conventional school boundaries by supporting innovative approaches like team-teaching across different schools and reimagining physical learning spaces. By allowing more flexible learning environments, this approach could have enabled students to access education more dynamically, potentially reducing the need for full-time physical school attendance. Ultimately, the proposed structure aimed to create a more

networked, adaptable educational ecosystem that supported diverse learning needs and opportunities across Aotearoa New Zealand's school system.

However, all of these visions were limited in their proposals to the boundaries of the existing school sector in Aotearoa New Zealand. The COVID-19 pandemic provided an opportunity to envision an educational ecosystem that was not confined by these limitations. One example of this limitless vision was presented by Wenmoth (2021b), who provided a framework for considering what education might look like in an environment where learning was not dependent on time or location (see Figure 3).

Figure 3.

Hybrid teaching and learning models



(Wenmoth, 2021b, p. 15)

While removing some of the traditional boundaries, this framework was still proposed as a way for school leaders to create a more resilient approach in light of the continued presence of COVID-19 in communities throughout Aotearoa New Zealand.

Methodology

This broader research project consisted of two interconnected studies focusing on distance learning in New Zealand schools. The first study aimed to conduct a nationwide assessment of learning programmes, including their governance and scope of activities over the past five years (and the report focused on the 2023 school year was released as Barbour & Wenmoth, 2024a). The second study sought to describe an educational ecosystem that could maximise the advantages of distance learning across all areas of the school sector. The specific research questions for this study were:

1. How can an ecosystem be created for New Zealand schools that leverages multiple providers and achieves scale and sustainability?
2. What steps are needed to realise this vision?

In addition to describing an ideal educational ecosystem, the researchers also aimed to make recommendations for removing specific barriers.

For this study, the researchers chose to employ a purposeful and convenient sample. Purposeful sampling is often used in qualitative research as a method to identify and choose participants who might provide rich information, allowing them to make efficient use of their constrained resources (Patton, 2002). Further, purposeful sampling requires identifying and selecting participants who possess substantial knowledge and experience with the phenomenon being studied (Cresswell & Plano Clark, 2011), while also considering their availability, willingness to engage in the research, and capacity to articulate their experiences and perspectives clearly and thoughtfully (Bernard, 2002). The actual sample included current and former leaders of distance learning programs as identified by Barbour and Wenmoth (2024b), officials from the Ministry of Education, and other stakeholders

involved in the provision or support of digital learning (e.g., Network for Learning, Greater Christchurch Schools Network, CORE Education, the Education Partnership & Innovation Trust, and others). This also represented a convenience sample, as these participants were unsystematically chosen research participants based on how easily accessible, they were and their closeness to the research topic (Jager et al., 2017).

Data were collected through informal interviews and focus groups with distance learning leaders and stakeholders. While there was no formal interview protocol, participants were provided with questions in advance to guide discussions (see Appendix A). Open-ended or unstructured interviews allowed researchers to gather rich, in-depth data by giving participants the freedom to express their thoughts and experiences in their own words (Brinkmann, 2014). This approach was particularly useful for exploring complex topics or uncovering unexpected insights that might not have been captured by more structured methods (DiCicco-Bloom & Crabtree, 2006). During the actual interview or focus group, the researchers utilised a combination of both asking some of the protocol questions directly or using them as conversation starters and adapting based on the specific interview context. This approach enabled researchers to adapt their questions and follow up on interesting points as they arose during the conversation, potentially leading to a more comprehensive understanding of the subject matter (Corbin & Morse, 2003).

The interviews and focus groups were recorded using either the internal recording feature in *Zoom* for the online sessions and an iPhone's voice memo feature for the in-person sessions. Additionally, the interviewer kept detailed field notes during each session. The recordings were transcribed verbatim (Sandelowski, 1994), carefully omitting conversational fillers (MacLean et al., 2004). The researchers first feed the complete transcripts – both individually and collectively – into a text generative artificial intelligence

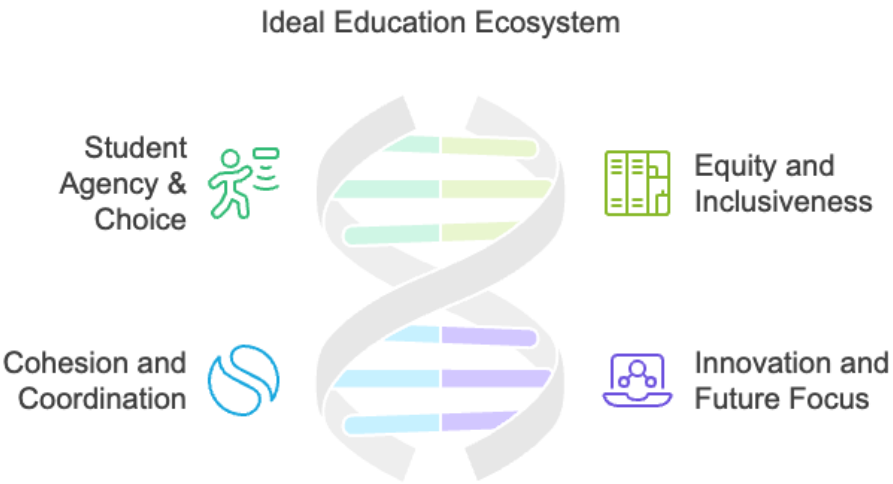
(AI) software (*Claude Sonnet 3.7*) to generate summaries of each transcript and initial themes. The researchers then coded the data using an inductive analysis approach (LeCompte & Preissle, 1993), with constant comparative coding to develop thematic insights and generate meaningful interpretations using the original transcripts (Ezzy, 2002; Strauss & Corbin, 1994), but also being sensitive to the information provided by the AI.

An Idealized Education Ecosystem

Based on the analysis of the data for research question one, four characteristics of an ideal education ecosystem where there is a seamless integration of distance and in-person learning were identified (see Figure 4).

Figure 4.

Themes generated of an ideal ecosystem for New Zealand schools that leverages multiple providers and achieves scale and sustainability



In the following sub-sections, we expand on each of these characteristics by describing the theme based upon the data that was generated, including reference to general comments and specific quotes from individual participants of the study and a discussion of the theme based on the existing literature.

An Ideal Ecosystem has Student Agency and Choice

An ideal ecosystem will make provision for student agency, enabling greater choice and flexibility on the part of the student. Many traditional forms of distance education have focused largely on the delivery of predetermined content that the learner is expected to

engage with by reading and responding to set activities or assessment tasks. While benefits of this approach include the ability to provide access to a large number of learners, it is also criticised for being a 'one-size-fits-all' approach that doesn't take into account the particular needs or context of the learner (Moore & Kearsley, 2011). However, student "agency is about students having the understanding, ability and opportunity to be part of the learning design and taking action to intervene in the learning process and become effective lifelong learners" (Wenmoth et al., 2023, p. 14).

In the evolving landscape of education, a paradigm shift is underway that recognises the uniqueness of individual learners, taking into account their approach to learning, the types of support they need and their particular areas of passion and interest (Zimmerman, 2002). The ideal ecosystem therefore places student agency and choice at the forefront of the design of learning experiences. As one interviewee illustrated in some detail:

> *…each child would be asked where they see themself in the future and then you backtrack from there and it might be that a student doesn't have to go to a specific school. It could be that this learning organisation might offer this opportunity to give them an experience where they're working hands-on with animals, and then they might do that on site for one day a week. Then this student might also be really interested in doing some lab work around plants and so they might go to an institution or a learning organisation where they can take part in that, and then there might be several other things that the young person wants to learn that they can do that from their own home.*

Research has shown that students should not be regarded as passive recipients of knowledge but should be active participants in their educational journey (Bandura, 2018).

By empowering students with greater control over their learning pathways, we can create a more engaging, relevant, and effective educational environment (Ryan & Deci, 2020).

At the heart of this ideal ecosystem lies the concept of customisable or responsive learning opportunities. Rather than adhering to a one-size-fits-all approach, education should be tailored to each student's unique interests, aspirations, and learning styles (Tomlinson & McTighe, 2016). As one interviewee remarked, “[when I reflect on] my own schooling experience…. we missed those opportunities to do some of the things which would have really enriched our lives, and I would like to see every student able to do – with guidance – the courses that they were attracted to.” As Wenmoth et al. (2023) wrote, “learner agency is about having the power, combined with choices, to take meaningful action and see the result of those decisions” (p. 14). This individualised approach allows for hands-on experiences, community engagement, and real-life challenges that resonate with students' personal goals and passions.

While there is often talk about student agency, it is frequently constrained by the rigid policies and regulations that create the conditions within which things are operating (Priestley et al., 2015). Achieving a system that fully supports student agency requires a fundamental restructuring of how education is delivered and assessed. To achieve genuine agency, we must reimagine educational structures to give students more control over their learning journeys (Biesta, 2019). Interestingly, representatives from one of the teacher organisations described how the flexibility that accompanied virtual learning would require a shift in the role of the teacher, while several of the leaders from virtual learning providers spoke about when students have agency the job of the teacher becomes more of a facilitator and, in some instances, an independent evaluator of student learning. This shift empowers students to become ‘self-managers’ of their education, fostering independence

and critical thinking skills that are essential for success in the modern world. Research by Cook-Sather (2020; 2022; Cook-Sather & Matthews, 2021) has repeatedly demonstrated that by actively engaging students in educational planning and considering their perspectives, we ensure that learning remains relevant, dynamic, and aligned with their needs. This approach not only enhances student engagement but also cultivates a sense of ownership and responsibility for their education.

The vision for the future of education, particularly in the online space, emphasises providing students with greater choice and flexibility (Means et al., 2014). This includes the ability to explore and select courses based on their interests, take classes online, and have more control over their learning schedules. As one interviewee put it, “I would want the opportunity for all students to access academic education no matter where they are, and the only way that is going to happen is by virtual learning.” By developing platforms and systems that support this level of autonomy, while still offering personalised guidance from educators, a more responsive and student-centered learning environment can be created. As we are reminded that student agency “can be thought of as a catalyst for change or transformation” (Wenmoth et al., 2023, p. 14).

In conclusion, an ideal educational ecosystem that prioritises student agency and choice has the potential to transform learning experiences. “Digital [learning] is about more than new technologies and improving IT systems. It also means doing things differently using new mindsets, skills, data and technologies to overcome barriers and better meet New Zealand’s needs” (Government of New Zealand, 2020, p. 9). By empowering students to take charge of their education, providing personalised learning paths, and actively including their voices in educational decision-making, we can create a more engaging, equitable, and effective learning environment. As one interviewee commented, it should be

about “equipping kids to be self-managers when it comes to their learning.” This approach not only prepares students for academic success but also equips them with the skills and mindset needed to thrive in an ever-changing world.

An Ideal Ecosystem is Equitable and Inclusive

An ideal ecosystem is equitable and inclusive, a principle that resonates strongly within the context of education. As the data was conducted in a post-pandemic context, the experiences of the COVD-19 remote learning were fresh in the minds of many of the interviewees (Wenmoth, 2021a). One of the lessons from that experience was that “the education responses during lockdown clearly identified a range of areas in our current approach that are not meeting the mark, and many are indeed exacerbating the problems of inequity and lack of inclusion” (Wenmoth, 2022, p. 2). The vision for a future education system emphasises flexibility and accessibility, allowing students to learn what they want, when they want, and where they want. This approach inherently promotes equity by accommodating diverse learning needs and circumstances.

Equity in education means ensuring that all students have equal opportunities, regardless of their geographic location, socioeconomic status, or individual circumstances. This includes addressing barriers such as transportation issues and providing equitable access to high-quality teachers and resources (Darling-Hammond & Cook-Harvey**,** 2018). As one interviewee put it, “how do you teach a growing population across a bigger geographic base with fewer teachers?” The importance of virtual learning in response to this question cannot be overstated, as it offers a powerful tool to bridge gaps and provide educational opportunities to students in remote areas or with specific learning needs (Means et al., 2014; Reich, 2020). For example, one interviewee stated that regardless of where the

student is located “they need to be able to be offered the opportunity of studying a subject that they want to,” while another interviewee described virtual learning as having the ability to “level in the playing field no matter where your children are they have equal opportunity to access learning as any as any other student.” This notion of the use of distance learning as a means to provide opportunities was a common example among interviewees.

The concept of ‘inclusion in school vs. inclusion in education’ highlights the need to think beyond traditional brick-and-mortar institutions (Slee, 2018). As the capital costs of building more schools outpace funding capabilities, there's a growing need for “permeability of where schooling occurs” (as one interviewee described), especially at the secondary level (Hargreaves & Fullan, 2015). Another interviewee suggested that “kids should learn at any time that works with them whether it's at school or home, in the community, at Nana's place, and the system has to change to enable that to happen.” This shift towards more flexible learning environments can help ensure that education reaches all students, regardless of their physical location (Barbour & Reeves, 2009). The use of distance learning as a means to provide flexible learning was probably best summed up by this interviewee who commented, “distance learning provides learning that is not rationed.”

Inclusion and equity are also crucial components of this ideal ecosystem. By offering flexible online learning opportunities, we can reach diverse student populations, including those from underserved communities and non-traditional learners (Rose & Meyer, 2016). This notion of being able to reach a diverse group of learners was underscored by several interviewees whenever Te Aho o Te Kura Pounamu was referenced. As one interviewee described, “Te Kura was one seen as a school of last resort for students who were failing in or had been failed by the traditional school system, but now Te Kura is often seen as a viable option for a full range of student context.” However, it's essential to address barriers to

access and participation, such as providing financial assistance, ensuring technology access, and offering targeted support for marginalised student groups (Gorski, 2018). For example, one interviewee spoke about the provision of technology during COVID and how in many low-income families simply providing students with access to a device wasn't helpful when the family was struggling to pay for electricity or the parents were not able to help the student set-up and support the technology that they received.

Equitable access to technology, including devices and broadband internet, also emerges as a critical factor in sustaining online programmes and ensuring all students can participate in virtual learning opportunities. This is particularly crucial given the geographic enrolment disparities observed, with the majority of students located in specific regions (Warschauer & Matuchniak, 2010). By making online education a right for all students, we can work towards overcoming these regional imbalances and providing equal opportunities across the board (DiMaggio & Hargittai, 2021). While there is a strong commitment to public education and equity, concerns about exclusive private providers limiting access highlight the need for a balanced approach. For example, one interviewee lamented about the fact that various VLN clusters had been around for decades, but "[everyone knows] about Crimson because we've had some very influential people who have endorsed it, you know our ex-prime minister" (and this was a specific example cited by several interviewees). Recognising and supporting public and non-profit virtual learning providers, like the VLN, could help ensure the sustainability and effectiveness of inclusive educational options.

Finally, an ideal educational ecosystem also recognises the importance of addressing basic needs (Maslow, 1943). As one interviewee noted, "I strongly believe that school is a great place for people just to go to eat their lunch because all that social side of being with people face to face is still really important." This holistic approach to education

acknowledges that learning cannot happen effectively if students' fundamental needs are not met (Jensen, 2019). As another interviewee summarised in a succinct fashion, “if you're at school, you're going to be warm and fed.” In distance education, just as in face-to-face contexts, educators must remain acutely aware that learning is fundamentally compromised when students' basic physiological and social needs are unmet, regardless of the physical distance between instructor and learner.

In conclusion, an ideal ecosystem in education is one that strives for equity and inclusivity by breaking down barriers, leveraging technology, and adapting to the diverse needs of all students. It recognises that true inclusion goes beyond physical presence in a school building and extends to providing quality educational opportunities for every student, regardless of their circumstances or location.

An Ideal Ecosystem is Cohesive and Coordinated

An ideal educational ecosystem is cohesive and coordinated. This approach would address many of the challenges currently embedded into the existing educational ecosystem, particularly with respect to the integration of digital learning in the school sector. At present, there is a fragmentation and lack of coordination evident in the school system that hinders the potential for seamless, effective education that meets the needs of all learners. To provide one example of this fragmentation, as a part of their recent *Tuia Te Hononga Tāngata, Tuia Te Hononga Ao: Taking the Pulse of Distance Learning in Aotearoa New Zealand* report, in an effort to clarify the nomenclature around distance learning Barbour and Wenmoth (2024a) described distance learning programmes, which differed from schools in that programmes did not have school identification codes; and thus were unable to perform formal functions that schools are able to undertake (e.g., grant credit,

provide transcripts, etc.). As such, these distance learning programmes must rely upon the good will of the community of schools that they cooperate with – as opposed to an interaction of equal partners with a common goal.

A cohesive and coordinated educational ecosystem would facilitate seamless collaboration among various learning providers, institutions, and organisations. This includes partnerships between traditional schools, distance learning providers, tertiary institutions, employers, and community organisations. As one participant described it:

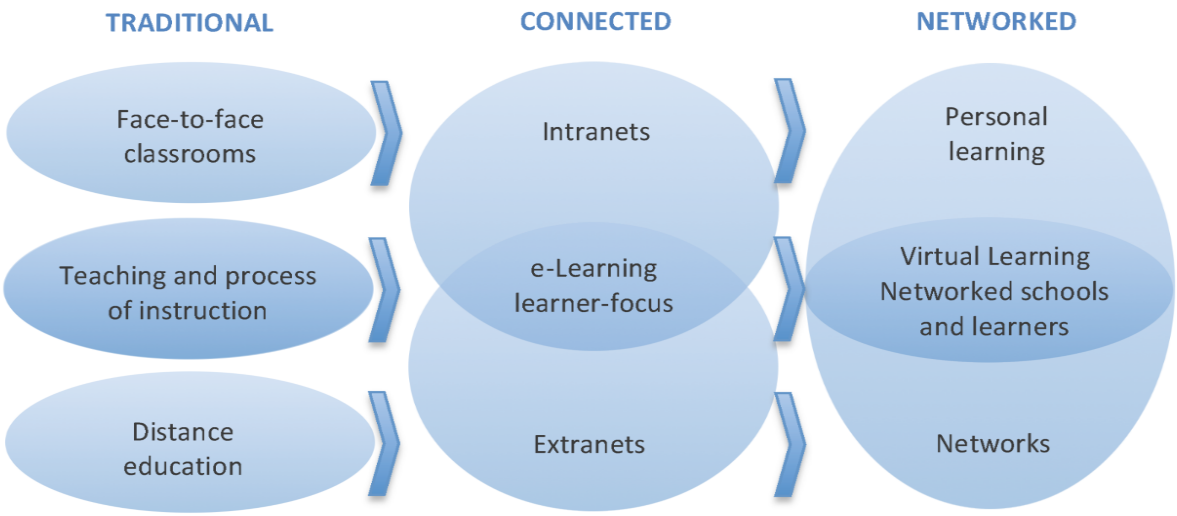
> *…a kid might thrive at this school but then it might be that they need something else as they grow and develop. And we often see that transition as a negative, but actually if in this period of your life you need to pop out with the regular system and pop into some online learning – whether it's take a break, to explore your passions, just do something different to you, or to rebuild your confidence so you can go back – we need to celebrate those partnerships.*

Such collaboration would enable the sharing of best practices, innovative approaches, and resources across different learning models, leading to a more robust and adaptable education system.

This kind of model was consistent with the one envisioned by Barbour and Wenmoth (2013) (and presented in Figure 2 above), as they proposed an organisational model that accommodated the partnerships between providers of education – regardless of modality – in an effort to achieve a vision of networked schools (Wenmoth, 2010).

Figure 5.

Wenmoth's (2010) vision of networked schools



(Barbour & Wenmoth, 2013, p. 13)

In this structure, a student could attend a single school, multiple schools, or no school at all. That student could receive their education from multiple providers – regardless of their physical location. The ecosystem would be set-up to allow the student to take advantage of learning based on their individual needs and also their own desires. One of the limitations of this original vision was that it focused on distance/virtual learning providers, whereas in the current educational context the 'New Other Providers' could include a wide range of in person career and technical focused providers.

A coordinated approach like the one described above would also address the current regulatory challenges faced by distance learning providers. The implementation of regulatory guidelines specific to distance learning, including class size ratios, professional development requirements, and evaluation processes, would ensure that distance learning institutions receive equitable treatment and recognition. As one interviewee described, "I don't like the term e-learning, because students are just learning," similar to another interviewee who remarked "it isn't virtual learning, it's just learning." Regulating distance

learning in the same manner as face-to-face learning would help legitimise distance learning and break down the artificial distinctions between distance learning and brick-and-mortar learning. While not specific to the New Zealand context, Barbour (2019) explored how a variety of North American distance schools and programmes handled the issue of class size. Similarly, Archambault et al. (2013) examined the ways that US-based distance schools and programmes managed the issue of attendance in an online or virtual format, while Barbour (2018) examined ways that distance schools and programmes could be equitably funded and resourced in comparison to their face-to-face counterparts. These international illustrations could provide examples

In an ideal ecosystem, there would be a standardisation of the use of technology platforms across schools and programs, reducing barriers for students and teachers and streamlining the learning experience. A national curriculum supported by a decentralised IT infrastructure, including cloud-based systems, to ensure continuity of education during disruptions and provide flexibility in learning approaches. Several interviewees, particularly those secondary level providers, made comments like “working within one learning management system, utilising the same tools, allows consistency around your pedagogy and learning design” or from the student perspective that “it's not a mystery to those joining.” This sentiment is consistent with the recommendations of the *Connected Ako: Digital and Data for Learning*, which indicated “across the education landscape this is an issue as education providers deal with the complexity of different student management systems, learning management systems, and data required at school and system levels” (Government of New Zealand, 2023, p. 19). One of the things that standardised technology would allow is the sharing of data and resources is another critical aspect of a cohesive educational system. A centralised platform where content and assessments are tagged and searchable would

allow for more personalised learning experiences and better tracking of student progress. Such a structure would help bridge the current gaps between siloed organisations and promote a unified approach to digital learning.

In addition to the lack of standardisation of systems and curriculum, there is currently a lack of consistency in pedagogy, learning design, and teacher capacity across digital learning providers. By working towards standardising these aspects, while still allowing for innovation and flexibility, the quality and effectiveness of schooling can be significantly improved. As one participant summarised it, the ability for teachers to be able to do this in the present teacher training programme is quite lacking.

> *I think we're preparing teachers woefully to use technology. They kind of expect that they'll just know how to use it, but they don't know how to use it. They don't know how to evaluate programmes effectively and decide whether they should be using it.*

These perceptions were largely exposed by the pandemic, and teachers inability to pivot learning modalities in a manner needed to ensure the continuity of learning for students. Research has shown that worldwide educators were simply unprepared and lacked the requisite training to be able to facilitate learning outside of the face-to-face modality (An et al., 2021; Eadens et al., 2022; European Commission, 2020; Francom et al., 2021; Lahr & Welch, 2023; Trust & Whalen, 2021 – just to name a few). As such, professional development and support for educators are essential components of a coordinated educational ecosystem.

In fact, there has been recent scholarship outlining exactly the kinds of actions that governments and tertiary institutions need to take. Broadly speaking, they argue that teacher education programmes need to provide teachers with experience in designing,

delivering, and facilitating online instruction, as well as learning themselves online. In particular, they recommend:

1. There must be sufficient course work to give pre-service teachers access to knowledge, skills, and attitudes related to K-12 online and blended learning.
2. Teacher candidates should have experiences as online learners.
3. Teacher education programmes must include field experiences in online and blended learning.
4. Have accrediting bodies and state agencies require that all pre-service teachers have meaningful and useful preparation to deliver online and blended learning. (Barbour & Hodges, 2024a, 2024b, 2024c, 2025; Hodges et al., 2022)

The reality is that a systematic approach to teacher training in digital pedagogical methods and technology integration would ensure that *all* educators are equipped with the skills necessary to thrive in a digital learning environment.

Finally, based on the interviews we conducted, central to this ideal ecosystem is the establishment of a centralised governance structure within the Ministry of Education, specifically focused on overseeing digital learning tools. In particular, several of the interviewees involved with distance learning programmes commented about the lack of knowledge that existed within the Ministry of Education about their part of the school sector, “a lot of the advisors within the government have no idea what we're [VLN programs] doing. Some of them have an idea of what we're doing, but they're actually gatekeepers and put up barriers to what we're doing because they have different ideas about what they want.” It was suggested that this team would include representatives from various distance learning providers, ensuring that diverse perspectives are considered in decision-making processes. However, it should be noted that this approach has been largely

unsuccessful in the past. For example, the VLN-C was formalised in 2010 with a goal to extend cooperation between the individual virtual learning clusters and be a vehicle for information and advocacy to the government (Wenmoth, 2011). In its initial stages it received funding from the Ministry of Education to support its members' own activities, as well as to provide national services and resources through an online community space (Wenmoth, 2019). However, by the time the COVID-19 pandemic emerged the VLN-C had become less of a coordination and advocacy organisation, and more of a term used to describe the remaining virtual learning programmes that were once its members (Education Gazette Editors, 2020). The main difference between what interviewees in this study have proposed and the example of the VLN-C is that the proposed team would be within the Ministry of Education, whereas the VLN-C was an external organisation supported and partially funded by the Ministry of Education.

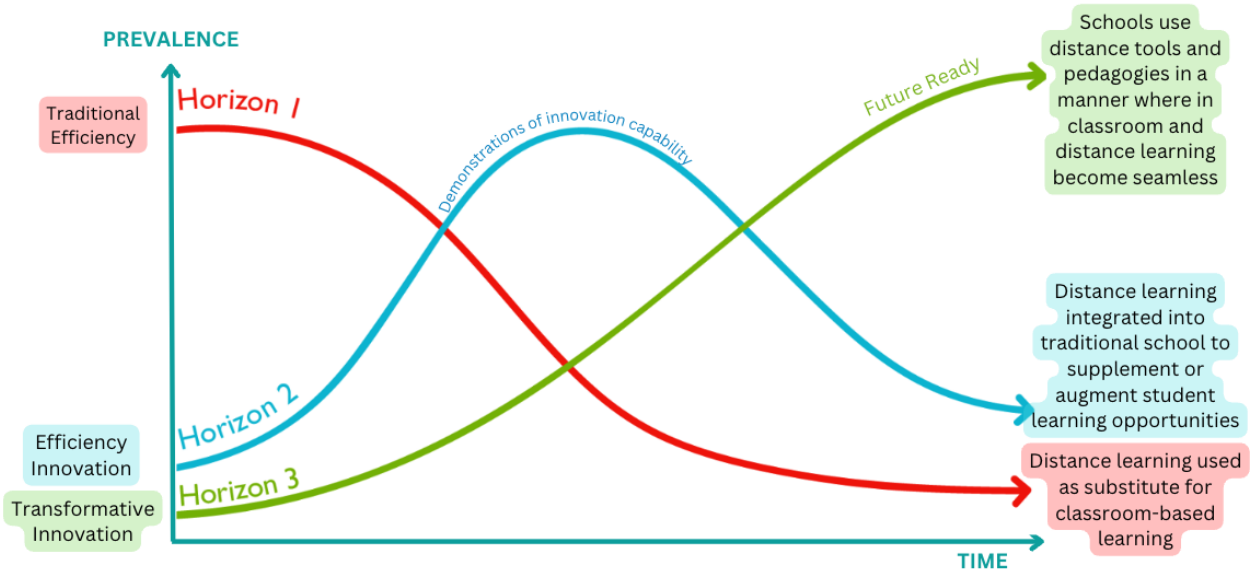
An ideal educational ecosystem that is cohesive and coordinated could address the current fragmentation, regulatory challenges, and inconsistencies in the compulsory sector. By fostering collaboration, standardising practices, implementing supportive governance structures, and leveraging technology effectively, such an ecosystem would provide a more flexible, diverse, and high-quality learning experience for all students. This approach would not only improve the current state of education, but also pave the way for a future where learning is seamlessly integrated across various contexts and modalities. While we presented this theme third, it was the theme that was discussed by the most interviewees and the most discussed topic by interviewees.

An Ideal Ecosystem is Innovative and Future Focused

An ideal ecosystem in education is innovative and future focused. The 'three horizons framework' referred to by many futurists offers a useful way of understanding how we must balance the tensions between policies that support traditional efficiencies (International Training Centre, n.d.), those that support disruptive innovations targeting specific problems or areas of needs and those that support the longer term vision of a future-ready stage (see Figure 6 below).

Figure 6.

Adaptation of the three horizons framework for distance and classroom-based learning



To achieve the ideal future state we must begin with a clear vision of what that might look like, or at least, the characteristics we'd hope to incorporate. This is the clear value of having a 'Horizon 3' vision. An innovative and future-focused approach will be continually learning and iteratively stepping towards the vision of the future – in this case, a context where schools and other organisations use distance learning tools and pedagogies in a manner where distance learning and classroom-based learning is seamlessly integrated, offering

students unlimited opportunities to access the learning they need or desire, both in and out of the classroom.

The current state of online education for school-aged learners has largely stagnated since its inception in the early 2000s, highlighting the pressing need for innovation to create a more effective and adaptable learning environment. This was particularly evident with several of those interviewed commenting on the "strong emphasis [of many existing virtual learning programs] on synchronous learning and the belief that 'real teaching' must be face-to-face" and that this "rigidity of synchronous learning causes issues with scheduling, especially considering the varied start and finish dates, teacher-only days, and other differences found in school timetables." There was a general sentiment among those interviewed that distance learning needed to "move beyond the rigid emphasis on synchronous learning" that currently dominated distance learning models. Educational innovation must transcend current paradigms, proactively designing learning ecosystems that anticipate and accommodate emerging technological and societal shifts, rather than merely responding to immediate needs (Wenmoth, 2022). This future-focused approach requires a radical reimagining of things such as assessment, credentialing, and learning pathways that can flexibly accommodate rapidly evolving disciplines like artificial intelligence, where traditional qualification frameworks fall short of capturing emerging competencies. It will also require a radical re-imagining of the role of those who are involved in designing, facilitating, supporting and assessing learning – currently all roles assigned to one person, the teacher.

The COVID-19 pandemic highlighted both the potential and challenges of online learning. While some schools successfully transitioned, others struggled due to unpreparedness. The prevalence of what became known as "Zoom school," where teachers

essentially transitioned their regular in person teaching to an online synchronous environment with few adjustments to account for the change of medium (Ardiansyahmiraja et al., 2021; Bloomfield et al., 2021; Marcelin et al., 2024), exemplified the need for systemic change. For example, during one group interview one of the individuals remarked that "the government missed a huge, a massive opportunity after COVID to promote online learning, to kick start it and to get it as part of [the formal system]," while the other individual in that group commented that "we thought COVID would be that catalyst the change, but it hasn't… The Ministry and policy officials don't want to make big policy changes" to address the deficiencies that were exposed. However, within those who participated in this study there was a call for systemic changes in education to support virtual learning, including revising funding models and improving regulatory frameworks.

An innovative ecosystem would address the limitations of traditional virtual learning, which has focused on synchronous instruction, by incorporating more flexible approaches. One interviewee was quite emphatic about this point when she indicated:

> *I think the big problem is, it's kind of stagnated. The model hasn't changed from when we started in the early 2000s. They were insistent then that they had to have the synchronous time, and that this was the model that was going to be used. And nothing's really changed since then.*

This approach would need to include exploring asynchronous learning options, which can better accommodate the diverse needs of students. Private schools offering distance learning and other smaller entities are emerging, potentially offering alternatives to traditional models. For example, the recent *Tuia Te Hononga Tāngata, Tuia Te Hononga Ao: Taking the Pulse of Distance Learning in Aotearoa New Zealand* report indicated that many of these private schools offering distance learning were focused on asynchronous and/or

self-paced models of student learning (Barbour & Wenmoth, 2024b). These new players may adopt different approaches. Similarly, Barbour and Wenmoth also reported that the nation's largest distance learning provider (i.e., Te Aho o Te Kura Pounamu) has undertaken steps to provide robust asynchronous online content and employ a comprehensive learning management system with students. The ability to offer anytime, anywhere learning is a key aspect of an innovative educational ecosystem, breaking free from the constraints of fixed schedules and locations.

Additionally, a future-focused ecosystem would embrace technological advancements and evolving teaching methods to enable a shift in mindset from viewing online and offline learning as separate entities to seeing learning as a unified concept, regardless of the mode of delivery. "I'd love all teachers to be in that space. I'd love for all students… to have that experience of learning online because I think it's a very powerful space for acquiring lifelong learning skills and those learning dispositions" stated one interviewee, who continued that "I think it's a very powerful context to sort of give the learners [the ability] to learn how to learn and develop those skills." This sentiment is echoed in Wenmoth's (2022) paper titled *Hybrid Learning, a Means to an End*, in which he stated "hybrid learning is not simply another delivery mode, it is a means to a transformed state of education" (p. 2).

Innovation in the educational ecosystem also extends to addressing present and future systemic challenges. This includes advocating for policy changes that support flexible learning options, revising funding models, and improving regulatory frameworks. One interviewee commented:

> *What happens if you've got a couple of students that want to take subjects, but you don't have a teacher that wants to teach it. You've got to come up with money now,*

and it's not always easy, and it's also not always easy to transfer between schools. So I think it's just much more complicated than it needs to be. It would be easier if it was government funded.

An innovative ecosystem would push for education policies that are forward-thinking and adaptable to rapidly changing technological and societal landscapes. Many of these policies were referenced in the previous 'An Ideal Ecosystem is Cohesive and Coordinated' section, beginning with recommendations made by Barbour and Wenmoth (2013) and, more recently, Wenmoth (2023). In formulating such policies it will be important to focus on those that support a transformative view of the future, in addition to any that support innovations targeting only immediate and short-term concerns.

A key characteristic of an ideal, future-ready, ecosystem for example would be that it prioritises addressing unique learning needs of all learners, especially in small or remote schools (Whalley & Barbour, 2020). Collaboration and community engagement are also crucial components of an innovative educational ecosystem. This involves fostering partnerships between schools, encouraging the sharing of resources and best practices, and involving various stakeholders in decision-making processes. This could involve developing specialised support in curriculum development, teacher training, and technology access (Zhao, 2018). By focusing on these areas, the ecosystem can ensure that innovation reaches all corners of the educational landscape, not just well-resourced urban centers.

Recommendations

The participants in this study were quite direct with suggestions on the specific actions that needed to occur to help facilitate their ideal vision for the future of education. These suggestions thematically fell into one of five general areas or categories: leadership/policy, resourcing/funding, infrastructure and systems, teacher roles, and accreditation. While these five areas are described as distinct categories below, the reader will note from the discussion below there was a great deal of overlap and interconnectedness between each of these areas.

Leadership/Policy

Participants indicated that there was a critical need to invest in leadership development programmes that prioritised building authentic relationships and trust among stakeholders, including educators, policymakers, and parents. This investment should be coupled with efforts to foster new leadership and diverse perspectives in education to better meet the evolving needs of students and adapt to a changing educational landscape. Participants felt that "leaders [at both school and organisational levels] needed to be proactive in understanding the needs of students, teachers, and parents, and in fostering partnerships and collaborations." To support this effort, participants recommended that "a national task force or advisory board comprising representatives from distance learning providers, schools, and the Ministry of Education [should] be formed to develop and implement a strategic plan for advancing distance learning in New Zealand." Participants suggested that this task force or advisory board could also serve as a lead team to advise the Ministry and ensure long-term sustainability of distance learning initiatives. Additionally,

participants felt there was a need to learn from both successful and unsuccessful examples of distance learning providers to improve existing programmes and develop new ones.

Participants also expressed a pressing need for greater recognition and support from the Ministry of Education to legitimise the role of some distance learning providers within the education system. For example, one participant referenced the fact that an official increase in the "visibility and validation could promote greater involvement from schools and students," while another participant spoke about recognition in terms of their ability "to secure long-term funding and make them less susceptible to changes in government priorities." To achieve these goals, advocacy efforts should be intensified with a goal to build strong relationships with stakeholders such as parents, communities, and government agencies. Participants felt that education policy should also be more future-oriented, considering technological advancements and changes in teaching and learning methods. One participant even suggested that "all teachers should spend some of their time teaching online." Finally, participants indicated that there was a need to advocate for innovative ways of learning and to support teachers in adapting to distance teaching, possibly through union involvement in policy changes. By implementing these actions, New Zealand could create a more robust, inclusive, and effective distance learning environment that serves the needs of all students.

Resourcing/Funding

Participants indicated it was crucial to advocate for policy changes that supported innovative approaches to education. These changes included revising attendance requirements and funding models to accommodate flexible learning options. Participants described a pressing need for "consistent, long-term funding and contractual arrangements

to ensure the stability and sustainability of [open, flexible and distance] learning providers." Simplifying funding structures to allow for mixing and matching courses from different providers could enhance flexibility and student choice. Additionally, participants (specifically from distance learning providers) called for an "increase in the overall funding and resources for distance providers is essential to address high student-staff ratios and provide adequate support for students" (although this was not raised by other stakeholders outside of those directly involved with the provision of distance learning). Other changes that were called for included establishing guidelines for staffing ratios and support roles to improve the quality of distance learning. Participants felt that collaboration and resource sharing among schools should be promoted to leverage expertise, curriculum materials, and best practices to address resource shortages and improve programme equality.

To overcome technological and infrastructural barriers, participants felt it was important to standardise technology platforms and improve campus capability at the learner level. This standardisation may require internal changes and political will from other stakeholder organisations. Participants also suggested that the education system should also "focus on empowering schools and teachers by providing greater autonomy and direct funding to tailor education to student needs." Addressing resource inequities was seen as crucial to ensure that schools with the greatest need – particularly small, rural, or sole-charge schools – had access to targeted assistance and support. Finally, participants felt that it was important to "recognise the value of dual enrollment for students" in any form of flexible or remote environment, ensuring "students maintain connections with regular neighbourhood schools while receiving learning opportunities in flexible environments." It was suggested that by implementing these recommendations, the education system could

better adapt to the changing landscape of learning, providing more flexible, accessible, and effective education for all students.

Infrastructure and Systems

Participants argued that to foster a more collaborative and effective educational environment, it was crucial to "prioritise resource sharing and collaboration among schools." By creating centralised repositories of resources and encouraging open communication channels between institutions, participants felt it could significantly enhance the quality of education for all students. Additionally, implementing decentralised IT infrastructure, such as cloud-based systems, was essential to ensure educational continuity during disruptions according to participants. However, addressing internet connectivity challenges remained a critical concern (particularly after what was seen with the recent pandemic). Participants suggested that "efforts should be made to improve coverage and affordability, which would enable all students to access distance learning resources equitably." To overcome structural barriers like time constraints and resistance to change, participants indicated that it was "important to advocate for policy reforms that support distance learning integration." This could include mandating schools to offer distance options and implementing standardised evaluation processes and professional development requirements for educators involved in distance teaching.

To further enhance the effectiveness of distance learning, participants argued that there should "be a focus on developing platforms that empower students to explore and select courses based on their interests while providing personalised support from educators." Investing in technology integration and real-time data analysis systems was seen as crucial for improving distance learning experiences and demonstrating outcomes.

Streamlining operations and resource allocation can optimise course offerings and ensure efficient use of resources. Participants suggested a need to implement “standardised enrolment procedures to facilitate smoother transitions for students and teachers between in person and distance learning settings.” Additionally, participants directly involved with distance learning providers suggested a “database of retired teachers interested in part-time distance teaching could be created to leverage valuable pedagogical expertise.” To address teacher shortages, it was suggested that mechanisms for sharing teaching resources across institutions should be developed. Lastly, participants argued that it was essential to consider “how tools and services were provided, whether centrally paid and provided, managed by the Ministry, or decided by individual schools, to ensure a cohesive and effective approach to online education implementation.”

Teacher Roles

It was surprising and unexpected the extent to which participants focused on the issue of teacher roles. Participants made it clear that there was a pressing need for “a significant shift in teacher education and professional development to address the challenges of [distance and flexible] learning environments.” “The education system must adapt to support various learning modalities” according to participants, which included face-to-face, distance, and hybrid models. To achieve this adaptation, participants felt that it was crucial to revamp teacher preparation programmes to incorporate comprehensive training in distance teaching methodologies, digital pedagogies, and effective use of educational technology. These changes should also include opportunities for pre-service teachers to gain hands-on experience in distance classrooms. Additionally, participants argued that “ongoing professional development for in-service teachers should be prioritised,” focusing on

enhancing their skills in technology integration, distance communication strategies, and adapting traditional teaching methods to distance environments. Participants indicated that it would be beneficial to “establish standardised professional development programmes or micro-credentialing opportunities specifically designed for distance teachers.” These initiatives should be complemented by mentorship programmes and regular evaluation to ensure the effectiveness of distance teaching practices. Furthermore, participants suggested that schools and teachers be empowered with greater autonomy and resources to tailor education to their students' needs, including direct funding and support for implementing flexible learning solutions.

To address the broader challenges facing education systems, participants also felt that it was essential to consider innovative approaches to teacher employment and resource allocation, particularly for distance educators. These approaches might involve developing new models for employing distance teachers directly by non-school providers, rather than through traditional school-based structures, to improve scalability and address employment challenges unique to distance learning environments. Participants also underscored a need to “prepare both the education system and – in particular – teachers for future crises, such as pandemics or natural disasters, by ensuring that both teachers and students are equipped with the skills necessary for effective distance learning.” This preparation should include teaching students how to learn independently in remote settings. Additionally, participants said it was “important to incorporate mental health support within the education system,” possibly through specialised roles like counselors or support services that could be accessed regardless of geographic location. Lastly, participants felt efforts should be made to attract high-quality applicants and subject specialists to the teaching profession, potentially by revising recruitment strategies and

offering more attractive career pathways in education. By implementing these suggestions, education systems could better prepare for the future of learning, ensuring that teachers are well-equipped to provide high-quality education across various modalities and that students receive the support they need to thrive in diverse learning environments.

Accreditation

Those participants who were directly involved in distance learning providers spoke to the need for systematic change with respect to accreditation. These individuals argued that distance learning providers like those associated with "the Virtual Learning Network-Community had demonstrated their value and effectiveness over two decades, particularly in serving diverse learners who benefited from flexible scheduling and learning environments." However, participants indicated that these providers faced "significant challenges due to lack of official recognition and support." To address this oversight, participants advocated for education authorities to consider creating a new category of accreditation specifically for distance learning providers that did not meet the definition of a school. This category would provide the necessary recognition and operational flexibility, allowing these providers to manage staffing independently and access resources like dual tuition pathways. Additionally, participants suggested that policymakers should review and "update regulations to accommodate the unique needs of distance learning environments to ensure they can operate effectively within the education system." Participants felt that it was crucial for "officials and school leaders to recognise the potential of distance learning beyond its role during the pandemic, and to integrate it more fully into the mainstream education system."

These participants did acknowledge several key areas that needed attention to enhance the effectiveness of these forms of distance learning. First, there should be a focus on developing and retaining qualified teachers specialising in distance learning, which could involve creating specific training programmes and career pathways for educators in these environments. Second, alternative assessment methods that reduce student stress and better align with distance learning modalities needed to be explored (e.g., project-based assessments or competency-based progression models). Third, efforts needed to be made to address social factors affecting families' attitudes towards education, particularly in the context of distance learning. These efforts might involve community outreach programmes and education campaigns to highlight the benefits and legitimacy of virtual learning. Finally, better communication and education among school leaders about the value of distance learning programmes was needed.

Potential Immediate Steps and Long-Term Actions

Unfortunately, the data generated with respect to the actions that participants felt needed to be taken in order to achieve their ideal vision were often clouded by the specific organisation that they represented. As Wenmoth (2024) pointed out, it is not uncommon for school leaders and educators to focus on finding “solutions [to day-to-day issues]... that suit that particular context and time” (para. 5). For example, the authors reported that those interviewees directly involved in non-profit programmes were focused on increasing funding and recognition for programmes like their own, whereas this was not referenced by any other interviewee. Further, calls for centralisations of learning tools and resources were common, but so were calls for independence to select appropriate tools and resources to meet local demands and needs. However, “decades of research on high-performing

education systems have demonstrated the need for strategic, forward-looking system leadership" (National Center on Education and the Economy, 2024, p. 35). Simply put, in many cases the individual participants exhibited the same limitation as many of the reform efforts from a decade earlier – an inability to outline actions beyond the status quo of the existing school sector framework.

Since the specific actions suggested by participants to facilitate their ideal vision for the future of education tended to be self-serving in many instances, and were also often in conflict with the ideal vision they had described, we have decided to focus on the interviewees' vision of an ideal education ecosystem and outline our own immediate steps and long term actions that can be taken to implement each aspect of that vision. The steps we have identified take into account many of the ideas raised by participants, together with our own observations and research into what is happening on other jurisdictions. Our lists of immediate actions are largely things that could be achieved within the current policy, regulatory and resourcing settings, while the long-term actions will require changes in many of these settings, involving Ministry of Education and government cooperation.

An Ideal Ecosystem has Student Agency and Choice

Informed by a growing body of research into effective, equitable, and future-focused learning, our first set of recommendations propose key shifts toward an education ecosystem that places learner agency and choice at its core (Balser & Tafuro, 2025; Hannon & Peterson, 2021; Wright, 2018). While current policy settings in many jurisdictions continue to prioritise foundational skills and standardised outcomes, such approaches often operate within narrow definitions of success and can limit the flexibility needed to respond to diverse learner needs and contexts. At the same time, the expansion of open, flexible,

and distance education offers new possibilities for learners to engage in self-directed, personalised pathways. While there are some changes that can be made immediately, realising the full potential of these modes requires systemic transformation – beyond isolated innovations – to reshape the structures, cultures, and practices of schooling. These recommendations advocate for an ecosystem in which learners are equipped and supported to make meaningful choices, navigate multiple pathways, and participate in learning that is relevant, inclusive, and responsive to a changing world.

The immediate steps that can be undertaken within the current framework of schools in New Zealand include:

1. Introduce more flexible course selection processes that allow students to choose classes aligned with their interests and future goals.
2. Create mechanisms for students to have consultative conversations about their learning pathways with educators who act as facilitators rather than instructors.
3. Develop mixed learning models that combine virtual and in-person experiences
4. Create opportunities for students to engage in hands-on learning across different sites.

In addition to actions that can be implement without larger structure change, there are also a series of goals that educational leaders, policymakers and legislators should strive towards. These actions include:

1. Redesign educational policies and regulations to support student agency, including;
    a. develop more flexible accreditation models that recognise learning achieved through diverse pathways
    b. create policy frameworks that validate learning experiences outside traditional classroom settings

c. establish mechanisms to credit experiential learning, community engagement, and self-directed projects

d. move away from standardised, uniform assessment methods

e. create dynamic policy environments that can quickly adapt to technological and pedagogical innovations

f. develop regulatory mechanisms that support, rather than constrain, educational experimentation

g. establish clear guidelines for quality assurance that don't rely on traditional compliance metrics

2. Shift the role of teachers from traditional instructors to embracing new roles that might include, for example:

   a. learning architects (e.g., design personalised learning experiences)

   b. personalised learning facilitators (e.g., provide individualised coaching and mentorship)

   c. collaborative learning specialists (e.g., facilitate cross-institutional and cross-disciplinary learning experiences)

   d. technology-enabled learning guides (e.g., proficient in using adaptive learning technologies)

3. Develop adaptive learning technologies that can create customised educational experiences, including platforms that allow students to co-design their learning experiences

4. Implement assessment methods that recognise and validate learning achieved through diverse, student-chosen experiences

5. Create comprehensive systems that allow students to map their learning journey from their current position to their future aspirations and sustain a record of learning that travels with them for life.

An Ideal Ecosystem is Equitable and Inclusive

Creating an education system that is truly equitable and inclusive requires both immediate action and sustained, long-term change. Some of the necessary shifts are already within the locus of control of educators, leaders, and communities – such as rethinking pedagogical approaches, strengthening relationships, and creating more culturally responsive learning environments (Borazon & Chuang, 2023; Stein et al., 2025). Other changes, however, will require broader policy and regulatory reform to address the structural conditions that continue to reproduce inequity at scale. These recommendations recognise that both levels of action are essential and interconnected. Drawing on research into the social and systemic dimensions of education (Darling-Hammond et al., 2024; Niemi, 2021; Wenmoth et al., 2023), they advocate for a deliberate redesign of learning ecosystems to ensure that every learner – regardless of background, identity, location, or circumstance – has meaningful access to opportunity, voice, and success. By committing to equity as a guiding principle and a design imperative, we lay the foundation for a more just and inclusive future – one in which all learners are able to access and participate in the learning they need and aspire to, in ways that are relevant, responsive, and free from unnecessary barriers.

The immediate steps that can be undertaken within the current framework of schools in New Zealand include:

1. Improve technology access for all through initiatives such as:

a. comprehensive device distribution programmes that consider the full context of families' needs.

b. provision of support systems to help families with technology setup and ongoing technical assistance.

c. ensuring programmes that provide devices also address related needs like internet connectivity and electricity costs.

2. Establish mechanisms to ensure students' basic needs (i.e., food, warmth, social connection) in both physical and virtual learning environments are identified and support provided.

3. Create hybrid models that maintain access to school facilities for social connection and basic needs while offering flexible learning options.

4. Provide targeted professional learning development (PLD) to help teachers effectively support diverse learners in virtual environments.

5. Create resource-sharing networks between schools to maximise access to quality teaching across geographic areas

In addition to actions that can be implement without larger structure change, there are also a series of goals that educational leaders, policymakers and legislators should strive towards. These actions include:

1. Develop a comprehensive broadband infrastructure to ensure universal internet access. Network4Learning (N4L) offers a useful model that could be developed further here.

2. Establish sustainable funding models for technology provision and maintenance. These models should ensure equitable resource distribution regardless of geographic location.

3. Develop integrated systems (e.g., technical and operational) for seamless learning across multiple locations (e.g., home, school, community spaces).
4. Create policies that support ‘unrationed learning’ where education isn't limited by physical space or time constraints, and can be accessed by those who need it.
5. Support system evolution by building comprehensive support networks that include:
    a. agile technical support infrastructure
    b. social and emotional support services
    c. family engagement and support programmes
    d. community partnerships for expanded learning opportunities
6. Ensure emphasis on sustainability measures, including provision of support for public and non-profit virtual learning providers to ensure sustainable, accessible options.
7. Develop quality assurance mechanisms that maintain high standards while preserving flexibility and accessibility.

An Ideal Ecosystem is Cohesive and Coordinated

A well-functioning education system depends not only on innovation and passion, but on coherence and coordination across all levels and parts of the system. Currently, many efforts to improve learning – particularly through the use of online and virtual learning – rely heavily on the commitment of individual educators or isolated pockets of expertise (Barbour & Wenmoth, 2024a; Clark & Barbour, 2015; Dede, 1996; Gottschalk & Weise, 2023). This fragmented approach makes it difficult to scale good practice, sustain progress, or ensure that all learners receive consistent levels of quality, support, and opportunity (Carretero Gómez et al., 2021; Parry & Metzger, 2023). These recommendations highlight both immediate actions that can strengthen local collaboration

and alignment, and longer-term strategies that require system-level leadership, infrastructure, and policy coherence. Building a cohesive and coordinated learning ecosystem means moving beyond siloed efforts to establish shared frameworks, trusted networks, and clear roles across schools, sectors, and agencies. It is through this kind of alignment that we can create the conditions for sustainable innovation and equitable learning experiences for all.

The immediate steps that can be undertaken within the current framework of schools in New Zealand include:

1. Implement common learning management systems across providers.
2. Create shared protocols for data exchange between institutions.
3. Ensure compliance with safety standards (e.g., Safer Technology 4 Schools[1]).
4. Establish consistent digital tools and platforms to reduce barriers for students moving between providers.
5. Develop clear guidelines for technology usage across different learning contexts.
6. Begin harmonising regulations between distance and in-person learning.
7. Establish common frameworks for:
    a. class size ratios
    b. attendance tracking
    c. credit granting
    d. assessment practices
8. Introduce immediate professional development in digital pedagogy.
9. Provide PLD programmes for existing teachers in online and blended learning.

[1] For more information, visit https://st4s.edu.au/

10. Establish mentoring networks between experienced online educators and newcomers.

In addition to actions that can be implement without larger structure change, there are also a series of goals that educational leaders, policymakers and legislators should strive towards. These actions include:

1. Develop a unified educational framework that:
    a. removes artificial distinctions between distance and face-to-face learning
    b. enables students to move freely between different learning modalities
    c. supports multiple concurrent enrolments across providers
    d. recognises learning regardless of delivery method
2. Establish a dedicated team within the Ministry of Education focused on digital teaching and learning.
3. Develop mechanisms for ongoing collaboration between different educational stakeholders.
4. Implement continuous evaluation and improvement processes for distance learning programmes.
5. Create cloud-based systems for continuity across providers.
6. Develop centralised platforms for sharing:
    a. content
    b. assessments
    c. student data
    d. learning resources
7. Redesign teacher education programmes to include:
    a. required coursework in online and blended learning

b. practical experience as online learners

c. field experiences in various learning modalities

d. integration of digital pedagogical methods

8. Establish accreditation requirements for digital teaching competencies – include these as part of the teacher registration process.

An Ideal Ecosystem is Innovative and Future Focused

To remain relevant and responsive in a rapidly changing world, education systems must not only embrace innovation but continually renew it. Over the past two decades, we have seen significant progress in developing new models of learning, particularly through the use of digital technologies and more flexible delivery approaches (Barbour & Wenmoth, 2024a; Wenmoth, 2019, 2022). Yet many of these innovations are now at risk of stagnation – either because they have not been adequately supported at the policy or resourcing level, or because the initial models have failed to evolve in step with emerging possibilities and learner needs (Conrads et al., 2017; Serdyukov, 2017). These recommendations call for a reinvestment in innovation as a core function of the learning ecosystem, underpinned by long-term strategy, agile policy settings, and a culture that encourages experimentation, reflection, and adaptation. In the short term, this means actively supporting innovation at the margins and learning from it; in the long term, it requires embedding future-focused thinking into the design of systems, infrastructure, and professional practice to ensure that innovation is not a one-off event, but a sustained and systemic capability.

The immediate steps that can be undertaken within the current framework of schools in New Zealand include:

1. Take steps to move away from synchronous-dominated models, including:

a. supporting schools in developing quality asynchronous learning options
b. creating flexible scheduling frameworks that move beyond fixed timetables
c. developing guidelines for blending synchronous and asynchronous learning effectively
d. providing resources for schools to experiment with different delivery models

2. Promote innovative design approaches by:
    a. training teachers in innovative pedagogical approaches beyond 'Zoom school'
    b. developing capacity for designing effective asynchronous learning experiences
    c. creating communities of practice for sharing innovative teaching approaches
    d. supporting teachers in developing skills for true online/hybrid teaching (not just face-to-face teaching online)
    e. establishing mechanisms to identify and share emerging best practices
    f. creating 'innovation sandboxes' where schools can safely experiment with new approaches
    g. providing seed funding for schools willing to pilot new learning models

In addition to actions that can be implement without larger structure change, there are also a series of goals that educational leaders, policymakers and legislators should strive towards. These actions include:

1. Develop new frameworks for:
    a. assessment that accommodates emerging competencies
    b. credentialing that recognises diverse learning pathways
    c. quality assurance that supports innovation

2. Create mechanisms for rapidly integrating new technologies and approaches at policy and practice levels.
3. Design forward-thinking policies that:
    a. support flexible learning options.
    b. enable rapid adaptation to technological change.
    c. fund innovation in education.
    d. remove barriers to experimental approaches.
4. Focus on achieving a shift in mindsets and practice through:
    a. fostering mindset change from "online vs offline" to unified learning
    b. building capacity for continuous innovation
    c. creating systems that encourage experimentation
    d. developing mechanisms for scaling successful innovations
5. Future-ready infrastructure capable of accommodating:
    a. emerging technologies (like AI)
    b. new pedagogical approaches
    c. changing student needs
    d. evolving workforce requirements

Conclusions

The vision for education presented in this article represents a fundamental reimagining of how learning can and should occur in Aotearoa New Zealand's school sector, one that seamlessly integrates distance and in-person learning to better serve diverse student needs. Drawing on interviews and focus groups with distance learning leaders and stakeholders, we have identified four essential characteristics of an ideal educational ecosystem. First, the envisioned system prioritises empowering learners to customize their educational pathways, supporting individual interests and goals. Second, a commitment to breaking down barriers ensures that all students, regardless of background or circumstance, have equitable access to learning opportunities and robust support. Third, the need for standardised technology platforms, consistent pedagogical approaches, and clear regulatory frameworks was emphasised to ensure all learning modalities are valued equally and work cohesively. Fourth, the ecosystem must move beyond traditional synchronous-only models, embracing flexible, technology-enhanced approaches that anticipate and respond to emerging educational needs. These characteristics are not independent but deeply interconnected, collectively forming the foundation for a transformed educational landscape.

The actual participants identified five key areas requiring action to realize their educational vision for the future. First, participants emphasised that leadership across the entire education system – from individual schools and distance learning organisations to the Ministry of Education and Government – must champion policies acknowledging that traditional school buildings aren't always the optimal learning environment for every student. Second, participants also called for fundamental changes to education financing,

proposing that student funding should be divisible and directed to whoever actually delivers the educational services. Third, participants advocated for developing comprehensive tracking systems that would monitor student progress with the same sophistication used to track healthcare or employment records. Fourth, participants further highlighted the need to redefine teachers' roles and correspondingly update both teacher training programs and ongoing professional development to prepare educators for these transformed responsibilities. Finally, participants proposed reforming how distance learning providers receive government accreditation to ensure proper funding and supervision of these alternative educational pathways.

However, as noted above, the participants' proposed actions were heavily influenced by their organisational affiliations (i.e., with each group advocating for solutions that would benefit their own organisation rather than taking steps towards their idealised vision). This narrow focus prevented many participants from thinking beyond existing educational frameworks, limiting their ability to envision truly transformative changes despite research showing the need for strategic, system-level leadership in high-performing education systems. As such, using existing literature and their decades of experience in the context, the authors proposed a series of immediate steps and long-term actions for each characteristic to provide a roadmap for this transformation. However, achieving this vision requires more than incremental changes to existing structures. It demands bold leadership, systemic reform, and a willingness to challenge traditional assumptions about how education should be delivered. The COVID-19 pandemic has shown both the necessity and possibility of such transformation, though it has also highlighted the considerable work still needed to realise this vision. For example, if policymakers were to enact only the immediate steps described above it would address all of the education recommendations outlined in

the recent report from *Te Tira Ārai Urutā: The Royal Commission of Inquiry into COVID-19 Lessons Learned* (Blakely et al., 2024). As we look to the future, the integration of distance and classroom-based learning should not be viewed as an alternative or backup option, but as the natural evolution of education in a digital age. This integrated approach offers the potential to create more personalised, equitable, and effective learning experiences for all students. The question is no longer whether such transformation is necessary or possible, but rather how quickly and effectively we can move to implement it. The future of education in Aotearoa New Zealand depends on our collective willingness to embrace this vision and take decisive action to make it a reality.

The findings of this study reinforce the urgency of coordinated transformation across policy, pedagogy, and infrastructure if Aotearoa New Zealand is to realise a more responsive and resilient educational ecosystem. Realising this vision will require deliberate investment in professional development that equips educators to adopt flexible, student-centred teaching practices, as well as the development of interoperable technology platforms that enable seamless movement between distance and in-person learning. Equity must remain a central focus: targeted resources and supports are essential to ensure that all learners—regardless of circumstance—can participate fully and thrive. E-learning practitioners will be at the forefront of this transformation. They are uniquely positioned to design and deliver personalised learning experiences, leveraging digital tools to foster learner agency and engagement. Their collaboration across institutions—sharing resources, expertise, and innovative practices—can strengthen the networked nature of the system and foster a culture of continuous improvement. Ultimately, all stakeholders have a role to play. Building a future-focused education system depends on a shared commitment to collaboration, inclusivity, and innovation. In such a system, students can move fluidly between different

learning environments, guided by their interests and needs, and supported by a coordinated web of educators, resources, and institutions. These collective efforts are essential to ensure that education remains responsive to the challenges and opportunities of a changing world.

While this study outlines an aspirational vision, there are several areas that will warrant further investigation in order that the future-focused learning ecosystem outlined in this paper can be fully realised and sustained. Four areas for future research are particularly salient. First, there is a need to explore effective models for scaling and sustaining integrated educational ecosystems, including governance structures and funding mechanisms that support innovation and equity. Second, with emerging technologies increasingly enabling personalised learning experiences, longitudinal studies are needed to evaluate their impact on student agency, achievement, engagement, and well-being over time. Third, addressing persistent inequities remains critical. Research should focus on identifying and evaluating interventions that successfully close participation and achievement gaps for marginalised learners. Finally, ongoing inquiry is needed into the effectiveness of digital platforms and AI-enabled tools in supporting personalised, hybrid learning approaches. Investigating these areas will generate the actionable insights needed to guide the continued evolution of New Zealand's educational system—ensuring it is inclusive, adaptive, and equipped to meet the needs of all learners in a digital age.

References

An, Y., Kaplan-Rakowski, R., Yang, J., Conan, J., Kinard, W., & Daughrity, (2021). Examining K-12 teachers' feelings, experiences, and perspectives regarding online teaching during the early stage of the COVID-19 pandemic. *Education Technology Research & Development,* 69, 2589-2613.https://doi.org/10.1007/s11423-021-10008-5

Archambault, L., Kennedy, K., & Bender, S. (2013). Cyber-truancy: Addressing issues of attendance in the digital age. *Journal of Research on Technology in Education*, *46*(1), 1-28. https://doi.org/10.1080/15391523.2013.10782611

Ardiansyahmiraja, B., Nadlifatin, R., Persada, S. F., Prasetyo, Y. T., & Redi, A. P. (2021). Learning from a distance during a pandemic outbreak: Factors affecting students' acceptance of distance learning during school closures due to COVID-19. *Journal of e-Learning and Knowledge Society, 17*(2), 21-31. https://doi.org/10.20368/1971-8829/1135412

Balser, W. F. & Tafuro, V. (2025). Shifting schools From strategy to foresight: Infusing educational leadership with futurist thinking, planning, and action. In J. Bailey Watters, G. Miller, & R. Rhone (Eds.), *Reimagining the P-20 Landscape for School Leadership Learning* (pp. 77-114). IGI Global Scientific Publishing. https://doi.org/10.4018/979-8-3693-6220-4.ch004

Bandura, A. (2018). Toward a psychology of human agency: Pathways and reflections. *Perspectives on Psychological Science, 13*(2), 130-136. https://doi.org/10.1177/1745691617699280

Barbour, M. K. (2011). *Primary and secondary e-learning: Examining the process of achieving maturity*. Distance Education Association of New Zealand. https://flanz.org.nz/wp-content/uploads/2024/06/DEANZ-2011-Barbour-Report.pdf

Barbour, M. K. (2018). *Funding and resourcing of distributed learning in Canada*. Canadian eLearning Network. https://k12sotn.ca/wp-content/uploads/2018/10/DL-Funding-Report.pdf

Barbour, M. K. (2019). *E-Learning class size*. Canadian E-Learning Network. https://k12sotn.ca/wp-content/uploads/2019/08/e-learning-class-size.pdf

Barbour, M. K., & Hodges, C. B. (2024a). Preparing teachers to teach online: A critical issue for teacher education. *Journal of Technology and Teacher Education, 32*(1), 5-27. https://doi.org/10.70725/394261afynbl

Barbour, M. K., & Hodges, C. B. (2024b). Pre-service teachers' preparation for teaching online: Past practices and future needs. In T. Martindale, T. B. Amankwatia, L. Cifuentes, & A. A. Piña (Eds.), *Handbook of Research in Online Learning (pp. 307-338)*. Brill. https://doi.org/10.1163/9789004702813_013

Barbour, M. K., & Hodges, C. B. (2024c). Preparing teachers for effective K-12 online learning in the age of disruptions: A call for transforming teacher education. *Open Praxis, 16*(4), 583-594. https://openpraxis.org/articles/10.55982/openpraxis.16.4.727

Barbour, M. K., & Hodges, C. (2025). History repeats, we forget: Short memories when it comes to K-12 distance learning. *Education Sciences*, *15*(4), 482. https://doi.org/10.3390/educsci15040482

Barbour, M. K., & Reeves, T. C. (2009). The reality of virtual schools: A review of the literature. *Computers and Education, 52*(2), 402-416. https://doi.org/10.1016/j.compedu.2008.09.009

Barbour, M. K., & Wenmoth, D. (2013). *Virtual learning as an impetus for educational change: Charting a way forward for learning in New Zealand*. CORE Education. https://futuremakers.nz/wp-content/uploads/2024/09/Virtual-Learning-as-an-Impetus-for-Educational-Change_-Charting-a-2.pdf

Barbour, M., & Wenmoth, D. (2024a). Tracing more than a century of distance learning in New Zealand schools: From correspondence to virtual networks. *Journal of Open, Flexible and Distance Learning, 27*(2). https://doi.org/10.61468/jofdl.v27i2.677

Barbour, M., & Wenmoth, D. (2024b). *Tuia te hononga tāngata, tuia te hononga ao: Taking the pulse of distance learning in Aotearoa New Zealand*. Flexible Learning Association of New Zealand. https://flanz.org.nz/dl-pulse/

Barbour, M. K., & Wenmoth, D. (2024c). An exploration of the state of distance learning in New Zealand's school sector. In *Proceedings of the Flexible Learning Association of New Zealand Conference* (pp. 1-13), Auckland, New Zealand. https://flanz.org.nz/wp-content/uploads/2024/09/flanz-proceedings-v9-spa-min.pdf

Barbour, M., & Wenmoth, D. (2025). Reimagining learning for Aotearoa New Zealand's future education ecosystem: Four pillars and a potential roadmap. *Journal of Open, Flexible and Distance Learning*, *29*(1), 12-49. https://doi.org/10.61468/jofdl.v29i1.695

Biesta, G. (2019). What kind of society does the school need? Redefining the democratic work of education in impatient times. *Studies in Philosophy and Education, 38*(6), 657-668. https://doi.org/10.1007/s11217-019-09675-y

Blakely, T., Whitehead, J., & Illingworth, G. (2024). *Whītiki Aotearoa: Lessons from COVID-19 to prepare Aotearoa New Zealand for a future pandemic – Main report*. Te Tira Ārai Urutā: The Royal Commission of Inquiry into COVID-19 Lessons Learned. https://www.covid19lessons.royalcommission.nz/reports-lessons-learned/main-report/

Bloomfield, V., Gapinski, S. M., Warren, G., & Fisher, M. E. (2021). Middle school stories. In M. Fisher, K. Maghzi, C. Achieng-Evensen, M. Dorner, H. Pearson, & M. Chun (Eds.), *Lessons from the Transition to Pandemic Education in the US: Analyses of Parent, Student, and Educator Experiences (pp. 27-38). Routledge.*

Borazon, E. Q., & Chuang, H. H. (2023). Resilience in educational system: A systematic review and directions for future research. *International Journal of Educational Development, 99*, 102761. https://doi.org/10.1016/j.ijedudev.2023.102761

Brinkmann, S. (2014). Unstructured and semi-structured interviewing. In P. Leavy (Ed.), *The Oxford Handbook of Qualitative Research* (pp. 277-299). Oxford University Press.

Buckrell, P., Hamilton-Williams, R., McAuley, K., Prebble, T., & Rajasingham, L. (1992). The use of telecommunications technologies for the enhancement of educational services: New Zealand Prime Minister and Cabinet.

Carretero Gómez, S., Napierala, J., Bessios, A., Mägi, E., Pugacewicz, A., Ranieri, M., Lombaerts, K., Robledo Bottcher, N., Montanari, M. & González Vázquez, I. (2021). *What did we learn from schooling practices during the COVID-19 lockdown*. Publications Office of the European Union. https://hdl.handle.net/2158/1224355

Clark, T., & Barbour, M. (Eds.). (2015). *Online, blended, and distance education in schools: Building successful programs.* Routledge.

Conrads, J., Rasmussen, M., Winters, N., Geniets, A., & Langer, L. (2017). *Digital education policies in Europe and beyond: Key design principles for more effective policies.* Publications Office of the European Union. https://dx.doi.org/10.2760/462941

Cook-Sather, A. (2020). Student voice across contexts: Fostering student agency in today's schools. *Theory into Practice, 59*(2), 182-191. https://doi.org/10.1080/00405841.2019.1705091

Cook-Sather, A. (2022). Toward equitable and inclusive school practices: Expanding approaches to "research with" young people. *Journal of Adolescent & Adult Literacy, 66*, 146-148. https://doi.org/10.1002/jaal.1265

Cook-Sather, A., & Matthews, K. E. (2021). Pedagogical partnership: Engaging with students as co-creators of curriculum, assessment and knowledge. In L. Hunt & D. Chalmers (Eds.), *University Teaching in Focus* (pp. 243-259). Routledge.

Corbin, J., & Morse, J. M. (2003). The unstructured interactive interview: Issues of reciprocity and risks when dealing with sensitive topics. *Qualitative Inquiry, 9*(3), 335-354. https://doi.org/10.1177/1077800403009003001

Cresswell, J. W., & Plano Clark, V. L. (2011). *Designing and conducting mixed method research* (2nd ed.). Sage.

Darling-Hammond, L., & Cook-Harvey, C. H. (2018). *Educating the whole child: Improving equity and excellence in schools*. Learning Policy Institute. https://learningpolicyinstitute.org/sites/default/files/product-files/Educating_Whole_Child_REPORT.pdf

Darling-Hammond, L., Alexander, M., & Hernández, L. E. (2024). *Redesigning high schools: 10 features for success.* Learning Policy Institute. https://files.eric.ed.gov/fulltext/ED658860.pdf

Dede, C. (1996). The evolution of distance education: Emerging technologies and distributed learning. *American Journal of Distance Education, 10*(2), 4-36. https://doi.org/10.1080/08923649609526919

DiCicco-Bloom, B., & Crabtree, B. F. (2006). The qualitative research interview. *Medical Education, 40*(4), 314-321. https://doi.org/10.1111/j.1365-2929.2006.02418.x

DiMaggio, P., Hargittai, E., Celeste, C., & Shafer, S. (2004). *From unequal access to differentiated use: A literature review and agenda for research on digital inequality*. Russell Sage Foundation. https://www.russellsage.org/sites/all/files/u4/DiMaggio%20et%20al.pdf

Eadens, D. W., Maddock, D., Thornburg, A. W., & Abernathy, D. F. (2022). K-12 teacher perspectives on the pandemic pivot to online teaching and learning. *Journal of Pedagogical Research, 6*(1), 131-151. https://doi.org/10.33902/JPR.2022175776

Editors. (2020, May 7). VLN Community ready to support schools with distance learning. *Education Gazette, 99*(6). https://gazette.education.govt.nz/articles/vln-community-ready-to-support-schools-with-distance-learning/

European Commission. (2020). *Education and training monitor 2020.* https://op.europa.eu/webpub/eac/education-and-training-monitor-2020/en/

Ezzy, D. (2002). *Qualitative analysis: Practice and innovation*. Routledge. https://doi.org/10.4324/9781315015484

Francom, G. M., Lee, S. J., & Pinkney, H. (2021). Technologies, challenges and needs of K-12 teachers in the transition to distance learning during the COVID-19 pandemic. *TechTrends, 65*(4), 589-601. https://doi.org/10.1007/s11528-021-00625-5

Gorski, P. C. (2017). *Reaching and teaching students in poverty: Strategies for erasing the opportunity gap*. Teachers College Press.

Gottschalk, F., & Weise, C. (2023). *Digital equity and inclusion in education: An overview of practice and policy in OECD countries, OECD Education Working Papers, No. 299*. OECD Publishing. https://doi.org/10.1787/7cb15030-en

Government of New Zealand. (2020). *Strategy for a digital public service*. https://www.digital.govt.nz/assets/Digital-government/Strategy/Strategy-for-a-Digital-Public-Service.pdf

Government of New Zealand. (2023). *Connected ako: Digital and data for learning – A strategy for education agencies 2023-2033*. Ministry of Education. https://assets.education.govt.nz/public/Documents/our-work/strategies-and-policies/digital-strategy/Connected-Ako-Digital-and-Data-for-Learning.pdf

Hannon, V., & Peterson, A. (2021). *Thrive: The purpose of schools in a changing world*. Cambridge University Press. https://doi.org/10.1017/9781108877152

Hargreaves, A., & Fullan, M. (2015). *Professional capital: Transforming teaching in every school*. Teachers College Press.

Hodges, C. B., Barbour, M. K., Ferdig, R. E. (2022). A 2025 vision for building access to K-12 online and blended learning in pre-service teacher education. *Journal of Technology and Teacher Education, 30*(2), 201-206. https://doi.org/10.70725/090843jrtash

International Training Centre. (n.d.). *Three horizon framework*. https://training.itcilo.org/delta/Foresight/3-Horizons.pdf

Jager, J., Putnick, D. L., & Bornstein, M. H. (2017). II. More than just convenient: the scientific merits of homogenous convenience samples. *Monographs of the Society for Research in Child Development, 82*(2), 13-30. https://doi.org/10.1111/mono.12296

Jensen, E. (2019). *Poor students, rich teaching*. Solution Tree Press.

Lahr, E. & Welch, S. (2023). Calling for changes in pre-service teacher education to prepare for more than face-to-face teaching: Learning from the COVID-19 pandemic. In A. Zimmerman (Ed.), *Research, Practice, and Innovations in Teacher Education During a Virtual Age* (pp. 158-174). IGI Global Scientific Publishing. https://doi.org/10.4018/978-1-6684-5316-2.ch009

LeCompte, M. D., & Preissle, J. (1993). *Ethnography and qualitative design in educational research* (2nd ed.). Academic Press.

MacLean, L. M., Meyer, M., & Estable, A. (2004). Improving accuracy of transcripts in qualitative research. *Qualitative Health Research, 14*(1), 113-123. https://doi.org/10.1177/1049732303259804

Marcelin, G. E., Marcelin, N. L., Marcelin, J. R., & Marcelin, A. (2024). Our parents were never home: Seeing the pandemic through children's eyes. *Clinical Infectious Diseases*, *78*(3), 499-500. https://doi.org/10.1093/cid/ciad564

Maslow, A. H. (1943). A theory of human motivation. *Psychological Review, 50*(4)*, 370-396.* https://psycnet.apa.org/doi/10.1037/h0054346

Means, B., Bakia, M., & Murphy, R. (2014). *Learning online: What research tells us about whether, when and how*. Routledge

Moore, M. G., & Kearsley, G. (2011). *Distance education: A systems view of online learning*. Wadsworth Cengage Learning.

National Center on Education and the Economy. (2024). *NCEE blueprint: Designing systems that work*. https://ncee.org/blueprint-for-a-high-performing-education-system/

Niemi, H. (2021). Education reforms for equity and quality: An analysis from an educational ecosystem perspective with reference to Finnish educational transformations. *Center for Educational Policy Studies Journal, 11*(2), 13-35. https://doi.org/10.26529/cepsj.1100

Parry, S., Metzger, E. (2023). Barriers to learning for sustainability: A teacher perspective. *Sustainable Earth Reviews, 6*(2). https://doi.org/10.1186/s42055-022-00050-3

Patton, M. Q. (2002). *Qualitative research and evaluation methods* (3rd ed.). Sage Publications.

Priestley, M., Biesta, G. J., Philippou, S., & Robinson, S. (2015). The teacher and the curriculum: Exploring teacher agency. In D. Wyse, L. Hayward, & J. Pandya (Eds.). *The SAGE Handbook of Curriculum, Pedagogy and Assessment* (pp. 187-201). Sage.

Reich, J. (2020). *Failure to disrupt: Why technology alone can't transform education*. Harvard University Press. https://doi.org/10.2307/j.ctv322v4cp

Roberts, R. (2009). Video conferencing in distance learning: A New Zealand schools' perspective. *Journal of Distance Learning, 13*(1), 91-107. https://jofdl.nz/index.php/JOFDL/article/view/40

Rose, T., & Meyer, A. (2014). *Universal design for learning: Theory and practice*. Cast Professional Publishing.

Ryan, R. M., & Deci, E. L. (2020). Intrinsic and extrinsic motivation from a self-determination theory perspective: Definitions, theory, practices, and future directions. *Contemporary Educational Psychology, 61*, 101860. https://doi.org/10.1016/j.cedpsych.2020.101860

Sandelowski, M. (1994). Focus on qualitative methods: Notes on transcription. *Research in Nursing & Health, 17*, 311-314. https://doi.org/10.1002/nur.4770170410

Serdyukov, P. (2017). Innovation in education: What works, what doesn't, and what to do about it? *Journal of Research in Innovative Teaching & Learning, 10*(1), 4-33. https://doi.org/10.1108/JRIT-10-2016-0007

Slee, R.. (2018). *Inclusive education isn't dead, it just smells funny*. Routledge.

Stein, K. C., Mauldin, C., Marciano, J. E., & Kintz, T. (2025). Culturally responsive-sustaining education and student engagement: A call to integrate two fields for educational change. *Journal of Educational Change, 26*, 29-55. https://doi.org/10.1007/s10833-024-09510-3

Strauss, A., & Corbin, J. (1994). Grounded theory methodology: An overview. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of Qualitative Research* (pp. 273-285). Sage.

Tomlinson, C. A., & Imbaeu, M. (2016). *Leading and managing a differentiated classroom*. ASCD.

Trust, T., & Whalen, J. (2021). K-12 teachers' experiences and challenges with using technology for emergency remote teaching during the COVID-19 pandemic. *Italian Journal of Educational Technology, 29*(2), 10-25. https://doi.org/10.17471/2499-4324/1192

Waiti, P. (2005). *Evaluation of Kaupapa Ara Whakawhiti Mātauranga (KAWM)*. Ministry of Education. https://www.educationcounts.govt.nz/publications/maori/maori-medium-and-english-medium/5087

Warschauer, M., & Matuchniak, T. (2010). *New technology and digital worlds: Analyzing evidence of equity in access, use, and outcomes. Review of Research in Education, 34*(1), 179-225. https://doi.org/10.3102/0091732X09349791

Wenmoth, D. (2010). The future – Trends, challenges and opportunities. In V. Ham & D. Wenmoth (eds.). *e-Learnings: Implementing a national strategy project for ICT in education, 1998-2010* (pp. 196-203). CORE Education.

Wenmoth, D. (2012). *Business case: Virtual Learning Network-Community (VLN-C).* CORE Education.

Wenmoth, D. (2019). *The VLN in New Zealand: History and future thoughts*. FutureMakers Ltd. https://futuremakers.nz/thought-pieces/vln-in-nz/

Wenmoth, D. (2020a). *Leveraging the potential of digital in a post COVID-19 world: Digital agency.* FutureMakers Ltd. https://futuremakers.nz/thought-pieces/digital-agency/

Wenmoth, D. (2020b). *Leveraging the potential of digital in a post COVID-19 world: Digital pedagogy.* FutureMakers Ltd. https://futuremakers.nz/thought-pieces/digital-pedagogy/

Wenmoth, D. (2020c). *Leveraging the potential of digital in a post COVID-19 world: Digital trends and drivers*. FutureMakers Ltd. https://futuremakers.nz/thought-pieces/digital-trends-and-drivers/

Wenmoth, D. (2020d). *Leveraging the potential of digital in a post COVID-19 world: Current uses of digital in NZ settings.* FutureMakers Ltd. https://futuremakers.nz/thought-pieces/current-use-of-digital-in-nz-settings/

Wenmoth, D. (2021a). *COVID research: The role of digital technologies in the education response to the COVID-19 pandemic*. FutureMakers Ltd. https://futuremakers.nz/thought-pieces/covid-19-research/

Wenmoth, D. (2021b). *Resilience planning for schools*. FutureMakers Ltd. https://futuremakers.nz/thought-pieces/resilience-planning/

Wenmoth, D. (2022). *Hybrid learning, a means to an end.* FutureMakers Ltd. https://futuremakers.nz/thought-pieces/hybrid-learning-means-to-an-end/

Wenmoth, D (2023) *Digital Agency*. FutureMakers Ltd. https://futuremakers.nz/thought-pieces/digital-agency/

Wenmoth, D. (2024, September 23). *Systems thinking*. FutureMakers Ltd. https://futuremakers.nz/2024/09/23/systems-thinking literature

Wenmoth, D., Jones, M., Edwards, G., & Thompson, A. (2023). *Agency by design: An educator's playbook*. The Aurora Institute. https://aurora-institute.org/resource/agency-by-design-an-educators-playbook/

Whalley, R., & Barbour, M. K. (2020). Collaboration and virtual learning in New Zealand rural primary schools: A review of the literature. *Turkish Online Journal of Distance Education, 21*(2), 102-125. https://doi.org/10.17718/tojde.727983

Woods, G. (2022). *Going the distance: 100 years of Te Aho o Te Kura Pounamu – The Correspondence School*. Blue Star.

Wright, N. (2018). *Becoming an innovative learning environment: The making of a New Zealand secondary school*. Springer.

Zhao, Y. (2018). *Reach for greatness*. Corwin, https://doi.org/10.4135/9781506316079

Zimmerman, B. J. (2002). Becoming a self-regulated learner: An overview. *Theory into Practice, 41*(2), 64-70. https://doi.org/10.1207/s15430421tip4102_2

Appendix A

Questions Provided Participants in Advance of the Interview or Focus Group

1. From your perspective, what are the challenges facing the current K-12 distance learning environment?
2. What are the obstacles that would need to be overcome to grow or increase the level of participation in K-12 distance learning?
3. Are these items legislative? Regulatory? Practical? Cultural?
4. What would need to occur to overcome these challenges or obstacles?
5. What would need to happen for all students to be able to enrol in K-12 distance learning?
6. How do we transition over the next decade to a seamless system where all students can learn in person or at a distance at any time?
7. How do we transition over the next decade to a seamless system where all teachers can teach in person or at a distance at any time?
8. Are there any additional issues related to K-12 distance learning, which we haven't had the opportunity to discuss, that you'd like to talk about? If yes, what are those issues?

THIS PAGE IS INTENTIONALLY LEFT BLANK

THIS PAGE IS INTENTIONALLY LEFT BLANK

UNBOUNDED LEARNING : A ROADMAP FOR A FUTURE FOCUSED EDUCATION ECOSYSTEM IN AOTEAROA NEW ZEALAND

MIchael Barbour
Derek Wenmoth