

CORE Ten Trends 2019

Contents

Introduction	3
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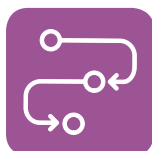
TECHNOLOGY

Social mapping	6 - 9
Real-time reporting	10 - 15



STRUCTURAL

Schools as part of community	16 - 21
Changing role of teachers	22 - 29



PROCESS

Micro-credentialing	30 - 33
Big data / small data	34 - 40



ECONOMIC

Human capital	41 - 46
Understanding success	47 - 54



CULTURAL

Wellbeing	55 - 61
Cultural narratives	62 - 69

Introduction

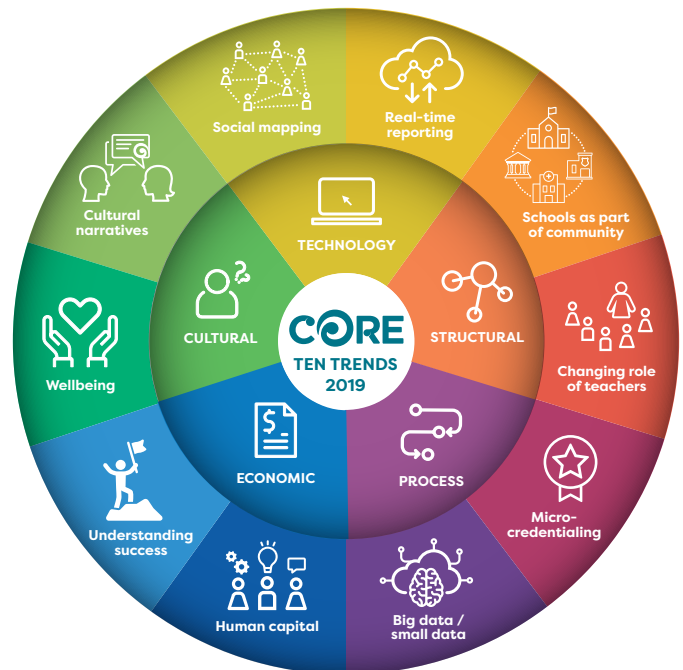
What are the Ten Trends?

Each year, CORE Education's experienced staff of researchers, educators, and digital technology experts pool their expertise and share their understandings to identify the trends and influences that are expected to make a growing impact upon education in New Zealand in the coming year.

We have been featuring these Trends for over ten years now, focusing in particular on the Trends and influences shaping how we live, work and learn brought about by the increasing use of technology in our modern world. Over that time, we have recorded the gradual and pervasive ways in which technologies have been appropriated and the impact they have had or are having. In doing so, we have persistently tried to highlight the impact this change is having on our society and our educational communities, suggesting ways in which we ought to be responding to 'stay ahead of the curve'.

What is the purpose of the Trends?

Our intention is to promote informed discussion - within and among educational communities - so that as a profession, we are equipped with the knowledge and understandings that we can then use to make wise choices and decisions in our settings. This needs to be done both in terms of how we may adopt or embrace these things, and in terms of how we design the curriculum and programmes of learning to ensure our young people are equipped with the knowledge and skills to make similar decisions in their own lives and into their future.



What's special about the 2019 focus?

In 2019, we have chosen to focus more specifically on where all of this is leading in terms of the relationship between this technological change and our responses as humans. We consider the responsibility we have to ensure that in the midst of such complex and persistent change, we don't abdicate our humanity and the things that make us 'human'.

Furthermore, in our 2019 themes, we focus on understanding how it is the decisions we make and actions we take that will determine how much of this change is manifest - for good and bad - and thus the importance of bringing these themes to the surface for critical review and reflection in our education settings.

A cultural perspective?

We are particularly mindful of what it means to consider the impacts of this change from a cultural perspective, and the need to understand and appreciate the different world views that exist, and how these will determine the ways in which these changes are embraced. We are aware that while the impact of these trends may be embraced by and provide advantage to some, the same trend may place others at a disadvantage or conflict with particular cultural values or beliefs.

In this year's list, some of the trends have an obvious cultural connection, while others must be considered in terms of the impact they may have within a particular cultural context, on the values, the beliefs and the practices of that group.

How are the Trends organised?

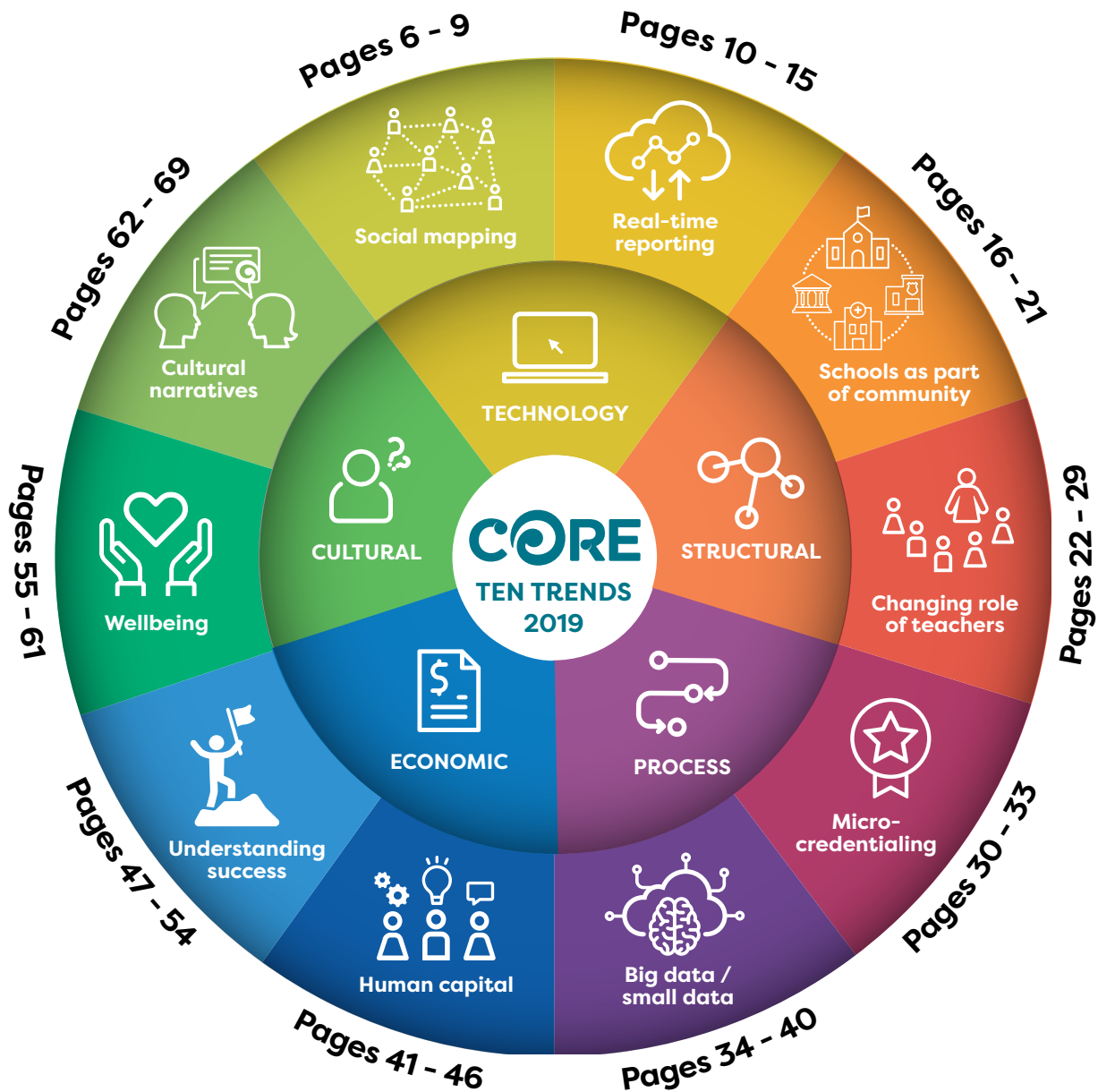
The Trends are focused on five key themes that are referred to in much of the future focused literature, with two specific examples identified in each theme for more in-

depth discussion and exploration. One of the examples illustrates a trend that has immediate implications for educational organisations and educators, while the other looks at a more 'disruptive' example, something to watch as it develops into the future, but which requires us to be thinking about and preparing ourselves for now.

For each of these sections, we pose questions that invite you to consider how these trends interact with education, both in terms of the effect they might have on education, and also the effect education might have on the trends. Through this, we want to encourage debate and active engagement in thinking through and responding to the issues and opportunities these trends present us with. We aren't advocating a blind acceptance and adoption of what is emerging, but neither are we supportive of an approach that regards what happens in educational settings as being somehow separate or 'insulated' from these things. In 2019, we wish to provoke more thinking about both the impact on ourselves as humans, and the impact that we, as humans, are having on the world we inhabit.



CORE's 2019 Ten Trends



TECHNOLOGY

Social mapping

Technology being used to allow a re-discovery and preservation of the connections we have with ‘our place’ - preserving the notion of place as an important part of identity.



What's this all about?

This trend involves the ways in which technology can enable re-discovery and preservation of the connections we have with ‘our place’. It is about preserving the notion of place as an important part of identity, including how we understand our past and how we face the future.

Social mapping also includes the emerging practices of using big data to bring together multiple views of communities to reveal areas of particular need or opportunity. This includes the community of a school /kura, and the range of factors that may be working for or against the learning and wellbeing of students / ākonga.

The world of Geographic Information Systems (GIS) illustrates this well. When Google Earth was created in 2001, we were introduced to an environment where we could gain views of our world we'd previously accessed through still images in books. It allowed us to build different connections with parts of the planet we inhabit. Just a few years later, in 2005, Google Maps was released, allowing us to navigate between geographical points in ways not previously imagined. Over time more and more detail has been added

to what we see on these maps, adding a richness to our understanding of ‘our place’ to the point now where these Google Earth and Google Maps are merged to provide different kinds of views and the information embedded in them.

The key thing here is not the maps that are created, but the seemingly limitless ways in which data about people, places, events, and features may be aggregated and represented as maps to provide views of our environment and communities that we've previously not imagined. This can be as true of a geographic map that shows us where the roadworks are at any moment in time as it is of a ‘map’ of our school or classroom, that shows how progress is being made towards learning goals, and what may be inhibiting or accelerating this.

Bringing together large amounts of high quality, geospatial information is one thing, but how might we also integrate the lived experience of people on the ground, what they care about and know to be happening minute by minute?

Social mapping is about how we can bridge the gap between “official”

knowledge and local knowledge in ways that make data more authentic and meaningful, valid and reliable, by creating mechanisms for those on the ground to feed into the data gathering process and have their voices, and their perspectives heard and recognised. It involves real-time, two-way communication with everyday people so they can participate in design solutions that meet everyday needs. Used in this way, social mapping provides a means to lift up the power of local and contextualised knowledge.

What's driving this change?

The term social mapping has been deliberately used for this trend to highlight the importance of how the use of technologies to create these 'maps' is impacting society, our sense of connection as communities, and our sense of self and wellbeing.

Turning big data into stories, represented as 'maps' that allow for various views and interpretations, is a key aspect of this trend, as we try to humanise global issues and challenges. Social mapping is making visible what has been invisible for a very long time (i.e. the cultural and indigenous landscapes). It helps us understand histories and our sense of connection with them, and provides perspectives on the future.

The technologies that allow us to combine data gathered from satellites orbiting Earth and sensors in a wide range of locations on Earth, together with the data that is generated in real time by the activities and inputs of humans, allow us to see patterns and trends that would previously have taken very long periods of time to 'stitch together'.



What examples of this can I see?

- Google and GIS giants such as [Esri](#) and [QGIS](#) provide a voice for indigenous peoples in relation to all areas of society including education.
- [Place-based education](#) (PBE) immerses students in local heritage, cultures, landscapes, opportunities, and experiences, using these as a foundation for the study of Māori histories, Te Reo Māori, mathematics, social studies, science, and other learning areas. PBE emphasises learning through participation in service projects for the local school and/or community. Social mapping is being [used here](#) as a way of helping to restore the place of Māori as tangata whenua.
- Map data analyses is helping people make better decisions and it is helping to provide solutions for everyday problems. For example [Streetwyze](#) is a project that enables citizens to navigate their neighborhood and discover hidden gems with real time help from the community. (See also the [Streetwyze Toolkit](#))
- Putting these tools into the hands of all people especially our young people, enables the future innovators, change makers and leaders - as illustrated by Antwi Akom in his TED talk on [Innovation out of poverty](#) and in this talk about [How Community Driven Technology and Social Innovation can Transform how we live in the 21st Century](#).

How might we respond?

Some questions to help you think about the next steps here include:

1. How might you have more inclusive engagement processes in your local community? What might this look like on a wider scale, regionally or nationally?
2. How might the use of social mapping contribute to your development of a localised curriculum?
3. How can you use data to make more effective, community-informed decisions? What mechanisms or processes for gathering and representing this data could you make use of?
4. What might the social map of your classroom or school look like if you could create it? What patterns or activities would you be interested in finding out about if such a map was available? What links would you include to data from the wider community (e.g. health, welfare etc.) that could add a richness to the decisions you make about student learning?



Links and resources

ESRI (Environmental Systems Research Institute)

QGIS (geographic information system)

Wikipedia | Place-based education

TKI (Te Kete Purangi) | Place-based Education | Māori History | Māori History in the NZ Curriculum

Streetwyze

Streetwyze: How Community Driven Technology and Social Innovation can Transform The Social Determinants of Health | Antwi Akom

Innovation out of poverty | Antwi Akom | TEDxSacramentoSalon



TECHNOLOGY

Real-time reporting

Focus on the technological solutions that help connect parents/whānau with learners with emphasis on the human connection.



What's this all about?

A newspaper headline earlier this year declared “*Six month school report to parents looks set to be axed*”, drawing attention to the proposal in a publicly available *conversation document* which asks: “How can we shift from reporting to parents and whānau as a twice-yearly ‘compliance’ activity to ongoing information sharing with ākonga [students], parents and whānau?”

Six-monthly school / kura reports on student / ākonga progress and achievement has been an historical requirement from government. This approach to reporting is retrospective, providing parents, whānau and board of trustees with information on a child’s past performance, and not always providing an accurate picture of their ‘real-time’ performance. Instead of using formative assessment to improve future learning, these reports are static, and without meaningful next steps for development.

Consider the world of health and fitness. A significant number of people today use devices that allow them to monitor fitness-related metrics such as distance walked or run, calories consumed, quality of sleep, and heart rate. Not only does the

device show what the current heart rate is, but combining that with data on exercise input, it can calculate recovery time and suggest the appropriate levels of training and exercise to achieve personal goals based on this information. Before devices like these became available, people would generally have checked in with a doctor or health professional for such updates and recommendations on how to amend their schedule.

This example serves to illustrate (a) the ability to provide information on-demand and when required, in this instance through the device worn, and (b) the change in impact of having this information shared in this way, enabling more timely and appropriate interventions leading to a more consistent approach to maintaining fitness.

In education, the same two things are happening. Real-time reporting involves leveraging digital technological solutions that help connect parents and whānau with their children in more timely and on-demand ways. But it also changes the fundamental purpose of the reporting, from heavy weighting on summative assessment, revealing how students

are placed nationally against all other children, to a focus on reporting that helps inform the 'next steps' in learning when it's needed. It is important to consider the means by which this happens, as well as the purpose of reporting. If we simply report the old information more regularly, we are in danger of burdening teachers / kaiako with more work.

The Ministry of Education's principles of effective reporting and information sharing require a shift to using technology to report to parents and whānau so that they can see children's progress on-line in real-time. It is important to note the principles also state that parents and whānau should clearly see their child's progress and achievement and how they are building key competencies and 'learning-to-learn' skills in a broad range of subjects, not just the traditional core subjects of literacy and numeracy.

McWilliams and Patton reveal that students whose parents receive regular and personalised messages with actionable information from teachers are more likely to succeed in school. But effective data-sharing programmes require more than simply sending data home. They also encourage educators and families to make connections with each other, sharing observations about how a child performs and behaves in different settings. They put the data in context, helping families understand how their child's performance conforms to expectations for children at that age or grade level. And they approach data-sharing as an ongoing process. They offer five tips for setting up successful data-sharing programmes:

- Recognise the need for discretion when sharing data.



- Make data accessible, understandable, and actionable.
- Build professional capacity.
- Give families access and training.
- Consider and address families' unique needs.

Besides the immediacy of information to help inform next steps in learning real-time reporting has a number of other benefits, including:

- enabling friends and whānau who may live overseas or in other parts of the country to share a child's learning journey and provide encouragement and feedback along the way.
- enabling parents and whānau to access this information at any time and from any place using mobile technologies.
- the ability to 'aggregate up' the personalised information to show patterns of achievement at a national level, to help inform where extra resources and support may best be directed.

What's driving this change?

The trend outlined here is a reflection of what is happening in our wider society, where there is an increasing emphasis on the following:

1. Demand for more timely, personalised feedback

The days of simply being 'one of the crowd' and accepting a 'one-size-fits-all' solution are over. In almost every facet of our lives we can see the response to greater demand for personalisation and timeliness of response to our questions, for example on-demand access to banking records as opposed to monthly statements.

This same trend has been evident in our education system for some years now, with a variety of initiatives designed to move away from the 'mass education' scenarios of a century ago, to more personalised approaches. With this comes the demand from learners to know 'how am I going' - i.e. how am I as an individual performing, and not simply as one of a cohort? Further, we require this sort of information 'on-demand', and not something that is reported to us retrospectively.

2. Greater emphasis on formative assessment and reporting

Central to this shift in demand in education is the recognition that the greatest benefit is the use of this information to inform next steps - i.e. formative feedback rather than summative. While summative reporting will always have a place, the use of real-

time, on-demand access to feedback about learning provides a much better platform to develop further learning, providing the incentives, pathways, and guidance to do so as a part of the targeted feedback. Potential difficulties can be addressed before they become major stumbling blocks to learners, and particular strengths and approaches can be used to accelerate learning potential.

3. Technological developments

Like most of our trends, the rapid development of technology is a key driver, largely as it enables us to do the things we've long dreamed of. The limitations posed by manually recording things happening in the classroom and the ability of a single teacher to adequately monitor real-time learning behaviours of their students are a part of what led to the patterns of summative reporting we have now. The emergence of the Internet, of big data and of apps that teachers and learners can install on the devices that they have in their hands (and pockets) offer ways in which the observations and recording of learning activities can be much more spontaneous. This, together with the increased processing power and access to vast stores of data that can be compared, provides the basis of an entirely different way of thinking about what is important when it comes to providing feedback to learners, their parents, and whānau.

What examples of this can I see?

1. *Stonefields school's written end of year report* forms only one part of the overall reporting to parents process. It shows student progress and achievement against *National Standards (archived)*, and against a matrix of learner qualities, including self awareness, determination and thinking skills. It also offers general comments on: building learning capacity, collaborating, making meaning and breakthrough.
2. *Hapara Teacher Dashboard* provides teachers with visibility into what their learners are working on, so they can provide feedback in the moment. The Hapara dashboard is currently being used by a large number of NZ schools that use the Google suite of applications.
3. The Ministry of Education's *Student Information Sharing Initiative (SISI)* is focused on developing a national repository of core learner information. This will enable data that is currently held within Student Management Systems (SMSs) to travel with children and young people as they move through the education system.
4. Schools and centres are using a range of portfolio applications to enable them to share information in a timely and responsive manner. Examples from schools are products such as *Linc-Ed* and *Seesaw*, while Early Childhood settings are using applications such as *Educa* and *Storypark*.



How might we respond?

Rather than becoming buried in the arguments about the frequency of reporting, we need to see more conversations in our staff-rooms and with our communities about the purpose of reporting, the 'why' behind our actions.

Some questions to help get you started in this journey include:

- What information is being shared with students, parents and whānau currently?
- What purpose does it serve, to lead and guide future learning, or to provide a summative snapshot?
- How do we support and build capability for student ownership in the sharing of that information?
- How do we ensure information is personalised to the student and whānau? (e.g. language, use of audio and video instead of simply text etc.)
- Whose interests are being served here? How is the learner being advantaged?

When thinking about new approaches that could be taken, consider:

- How might you engage with students, staff and community to ask what information they require?
- What use is made of the information you currently provide - by teachers, students, parents? Whose purposes does it serve?
- What balance between formative and summative reporting would best fit here?

- What opportunities are there for learners to co-construct, engage with and contribute to their assessments / reporting in real time?

When considering the role of technology, consider:

- What processes would you need to put in place to enable this that are not a burden for teachers, or mean that gathering and entering of data distracts from the learning?
- What platforms or apps are you familiar with that you and your students could be using more?
- What other information do you need to help develop a more complete understanding of what technology may offer, and what is currently being developed and made available?



Links and resources

Ministry of Education | Assessment Online | Principles of effective reporting and information sharing

Ministry of Education | Changes in Education | Student Information Sharing Initiative (SIS)

NZ Herald | Six month School Report to Parents look like to be axed

Applications with parent portal functionality:

- *Seesaw*
- *eTAP*
- *Linc-Ed*
- *Intel Coporation | Applying artificial Intelligence to how we learn*
- *Ministry of Education | Assessment Online | Reporting to Parents and Whānau Background paper*
- *Microsoft Education | Artificial Intelligence In The Classroom*
- *Forbes | How Is AI Used In Education | Real World Examples Of Today And A Peek Into The Future*
- *European Commission's Joint Research Centre 2018 | The Impact of Artificial Intelligence on Learning, Teaching, and Education*
- *ASCD (Association for Supervision and Curriculum Development) | How to Share Data with Families*



STRUCTURAL

Schools as part of community



What happens when we create more permeable boundaries to our classrooms and schools, and regard them as being more integrally a part of the rest of what happens in the community - no longer a 'walled garden'?

What's this all about?

For a long time schools / kura have been regarded as independent even 'insular' places where teaching and learning take place. We 'send' our tamariki to school or we 'go' to school to learn, in much the same way as we 'go' to our place of employment or 'go' to the dentist. This traditional view of schools and schooling has more often focused on the structures that support the institution, rather than activities that supports the learning.

Since the New Zealand education reforms of 1989 the policies and resourcing from central government have reinforced this notion of schools as stand-alone entities.

However, the idea of 'self-contained' schools is increasingly at odds with the growing 'connectedness' that characterises how we operate in so many other areas of our lives, particularly in a networked world.

If we consider schools and communities through an ecological framework, we can say that educators and learners are part of a learning ecology where boundaries are permeable. The concept of a learning ecology helps us to go beyond the narrow view of schools and other educational institutions as the sole providers of education for learners. Instead, a learning ecology takes into account the myriad of contexts, people and places encountered by a learner on her/his learning journey, both physical and virtual, and recognises that learning is transferred into and out of the school setting.

What's driving this change?

Key drivers for this trend include:

- focus on the learner
- investment in school facilities
- localised curriculum
- capacity of schools to provide breadth of curriculum.

Focus on the learner

While educators might argue a focus on individual learner achievement has always been at the heart of our system view, our record of success shows we still have a “long tail” of underachievement in New Zealand. The key thinking here is to address the inconsistency in the experience of so many learners as they progress from early years and through the schooling sector by providing a more ‘joined-up’ approach at all levels. When the education of a child is something the whole community takes responsibility for, the idea of competition between schools dissipates which causes a shift towards a greater commitment to everyone collaborating in the interests of each learner.

Investment in school facilities

Providing public education costs money, and ensuring it is spent efficiently and effectively is a concern of any government. Efficiencies can be gained from sharing resources within and between schools, including staffing expertise, governance expertise as well as curriculum resources. This works in both directions. The local community will inevitably have more facilities, resources and expertise available within it than exists solely in centres and schools. Conversely, with the increasing demand for space and rising costs for

land and buildings, centres and schools are becoming places of meeting for community groups and networking.

Localised curriculum

Community engagement is one of eight principles in The New Zealand Curriculum that provide a foundation for schools’ decision making. The principle of community engagement calls for schools and teachers / kaiako to deliver a curriculum that is meaningful, relevant, and connected to students’ / ākonga lives. Community engagement is also about establishing strong home-school partnerships where parents, whānau, and communities are involved in and support learning. This requires deliberate action to build relationships with community groups, and designing learning experiences with them that have impact in the community, for example, working together on community action projects such as planting in conservation areas.

Capacity of schools to provide breadth of curriculum

The traditional organisation of schools and centres as bureaucracies operating within hierarchical structures does not support or enable individuals and organisations to flourish. This is particularly evident when schools with finite resources struggle to provide programmes across the broad range of areas that learners may expect. But a shift is happening from an industrial/ structural model to one that is organic/ ecological. By extending the scope of access to expertise that supports learners in the areas they want to learn, schools better cater for students’ learning needs. They are also able to offer alternative pathways for the professional growth and development of teachers by enabling staff to build particular areas of expertise, and ensure a strong body of professionals in education.

What examples of this can I see?

The connections made between schools and community is a not new idea. Many schools have been operating successfully in this way for many years. The Community Engagement page on TKI provides [examples of community engagement in New Zealand schools](#). These case studies illustrate how connections can be made with community, how communities can be empowered through the actions of local schools, and how schools can benefit from the contributions of community to the learning programmes they offer.

Intra-school communities have emerged in the NZ context in recent years, illustrating the power of connections between schools and the fact that these connections create different perspective of what a school community might mean. Examples of this are [OtagoNet](#), [NetNZ](#) and the [Manaiakalani Outreach](#) network.

Further afield, the [Schools as Community Hubs](#) approach in Australia is showing positive results including improved attendance rates, parent engagement, and encouraging different ways to meet complex and changing needs of learners. The goal is to build a community where children, young people, teachers, parents, and community members work together interactively, recognising that children and young people learn best with real-life situations and hands-on activities.

A significant focus for New Zealand's schools in this regard is an increased focus on the needs of Māori learners, with community connections being an excellent way of achieving greater levels of [culturally responsive practice](#). This includes creating inclusive physical environments for students and whānau including design considerations that enhance building relationships between teachers and students as they work together in a variety of ways which best supports learning. Whānau and community are active within the school as important resources to learn from and with, in classrooms, kura and schools.



Increased opportunities to create connections both physically and in the online world, means schools need no longer work in isolation. The emphasis on schools working as clusters, highlighted in the *Tomorrow's Schools Review* recommendations, illustrates this trend, as does the work of the *Virtual Learning Network* and other established clusters of schools through New Zealand. The benefits to individual learners, teachers and schools of being more connected to their communities are considerable as access to expertise and resources become available that no individual school could provide on its own.

An excellent international example of virtual community connectedness is the *LRNG initiative* in the US which works with cities and organisations to connect learning experiences to career opportunities. Their goal is to “close the equity gap by transforming how young people access and experience learning, especially those from underserved communities, and have inspiration and guidance to prepare them for life and work in the modern economy.”

UNESCO's *Learning Cities initiative* is an example of community engagement on a significant scale. This project supports and improves the practice of lifelong learning in the world's cities by promoting policy dialogue and peer learning among member cities; forging links; fostering partnerships; providing capacity development; and developing instruments to encourage and recognise progress made in building learning cities. The underlying belief here is that lifelong learning and the learning society have a vital role to play in empowering citizens and effecting a transition to sustainable societies.



How might we respond?

When considering how your centre or school might become better connected to the community/ies you are a part of, there are two perspectives to consider:

Looking out

- What community/iwi assets and resources could you be making greater use of?
- How might you involve learners in contributing to community projects that make a real impact on your community or local iwi?
- Who are the people and organisations in your community that could provide expertise in areas you currently can't cater for within your kuru/centre/school? How might you best access this expertise?
- What connections do you have with other educational organisations in your community and are there opportunities to work together? Is there a mutual desire to provide the best educational experiences for learners in your community? Are you actively designing programmes and structures that make moving between and among your organisations straightforward for your learners?
- Which virtual communities are your students and staff connected to? How are these feeding into and informing the learning taking place in your centre/school? Are any of these purposefully designed to provide greater connectedness between learners and their whānau?

Looking within

- Curriculum: in what ways does the curriculum in your centre/school reflect a localised approach? Where could you be doing a better job of this?
- School and space design: whether planning a new building or re-purposing existing spaces, ask whose interests are being served. Communities have specific needs which can change over time so providing flexibility to what the community needs is important. Remember, 'Community develop spaces and spaces develop community'.
- Timetable: can you use time more flexibly to allow meaningful access to and engagement with community resources and expertise?



Links and resources

New Zealand Council for Educational Research (NZCER) | Rangahau Mātauranga o Aotearoa | Schools collaborating with community and professional experts

The Guardian | Schools need to be part of a community, not stand alone | News Article

Ministry of Education | The New Zealand Curriculum Online | Community Engagement | About the community engagement principle

Ministry of Education | The New Zealand Curriculum Online | Community Engagement | Examples

South Australia Department for Education | Schools as community hubs

UNESCO | Institute for Lifelong Learning | UNESCO Global Network of Learning Cities

Core Education | Ten Trends 2018

Ministry of Education | Educational Leaders | Embracing cultural narratives

Ministerial Advisory Group | Tomorrow's School Education Taskforce | Education Conversation | Kōrero Mātauranga

LRNG | Learning redesigned for the Connected Age

NZ Virtual Learning Network Community (VLNZ)

Kia Eke Panuku | Culturally Responsive and Relational Pedagogy



STRUCTURAL

Changing role of teachers



We've explored the notion of the shift in ownership to the learner - but what about the teacher? What are the new roles and responsibilities of teachers as we move to a different, more learner centred and learner driven paradigm in education?

What's this all about?

Teachers work in increasingly complex and diverse settings and they have very different and changing professional learning needs.

(Kay Livingston (2017) The complexity of learning and teaching: challenges for teacher education, European Journal of Teacher Education, 40:2, 141-143, DOI: 10.1080/02619768.2017.1296535)

At the heart of redesigning our education system is a dramatic need for schools / kura and teachers / kaiako to prepare our students / ākonga for a future characterised by change and uncertainty on a scale not previously experienced. This shift requires us to redefine the core business of schools and the role of teachers within them.

In New Zealand, and other nations, this shift is marked by a move from a “one-size-fits-all” approach of delivering and receiving knowledge, to an approach that honours the individual and their diversity. While considerable effort has been spent

identifying and describing a changing model for learners, what does this mean for the core role of the teacher?

A traditional view of the teacher's role is as a giver of knowledge. Teachers share knowledge with students on a particular subject, through lessons that build on their prior knowledge and moves them toward a deeper understanding of the subject. Supporting this view are underpinning beliefs about knowledge as being ‘fixed’ and able to be ‘transferred’.

Of course, teachers do have other roles: as evaluators of how effectively the transfer of knowledge has been achieved, as managers of behaviour and expectations, and as ‘carers’ catering for the health and wellbeing needs of those in their charge. But for the most part these exist to ensure the process of knowledge transfer is efficiently served.

Today these expectations are being challenged. The fundamental premise of teachers as the ‘conduit of knowledge’ is no longer valid. In recent years cliches

such as “moving from sage on the stage to guide on the side” have emerged to illustrate the awareness of the changes that are happening, focusing on the role of the teacher as more of a facilitator, guide, mentor and coach for example. This is an important part of the current issue, but it needs to go deeper than that.

Working in school communities that are very diverse increases the responsibility for leaders and teachers to protect and enhance the language, customs and cultural identity of the community and country that they reside in. For example, it is vital that teachers protect and revitalise the dual heritage of both the European and Māori cultures by actively, and equitably, incorporating both in teaching and learning programmes. Teachers have an important responsibility to know the cultural identity of their students, especially Māori students here in New Zealand, so that we can understand how they learn best and personalise the learning to match their cultural background and context.

As teachers move beyond their traditional role as experts in pedagogy and curriculum, the expectations placed on individuals are becoming unrealistic and unsustainable. Teachers are now expected to meet the social and emotional needs of a diverse learner population, rapidly implement ever-evolving pedagogical practices, deal with major structural changes in learning environments, and do all of this more collaboratively.

Added advances in technology mean that many of the ‘instructional’ roles of teachers are being challenged by personalised online learning services, chatbots and artificial intelligence, to the point that some are questioning whether there is

a future for teachers as we know them. As aspects of the teaching role become more automated teachers must have a stronger emphasis on building capabilities across the key competencies such as collaboration, communication, critical thinking, and the ability to problem solve and make quick decisions. In addition, the practice of working in isolation with a particular cohort of learners must shift to a more team-based approach, not only within the school environment, but recognising that the education of a young person is the responsibility of community as a whole.



What's driving this change?

There are a number of key drivers of this change, including:

1. A change in the 'why' of education

As evidenced by:

- Shifting from the concept of 'delivering learning' to 'enabling learning to happen'.
- Ensuring the school community provides learning experiences that foster positive emotion to enhance greater cognitive development.
- Learning experiences designed to meet the diverse and variable needs of all learners to ensure learning is fully inclusive and promotes success for all regardless of ability.
- Increasing recognition of societal changes, including issues of equity and catering for students who come to school disadvantaged.
- Pedagogies that focus on engagement, inquiry and active, flexible, deep learning.
- Collaborative practice and the need to build relational trust across teams.
- Deliberately designing learning to have horizontal connectedness across a wide range of curriculum areas, the community and the wider world.
- Learning experiences that open up opportunities for students to be curious, creative, and innovative.
- Deliberately designing learning for innovation and creativity.

- Designing learning experiences where students can develop social skills and relationships, collaborating with a range of different people and peers.

2. Technology changing the nature of human capability and capacity

As evidenced by:

- The unpredictability of the future workforce and rapid advancements of automation. The jobs of today were not the jobs of 10 years ago and will not be the jobs of 2030.
- The different skill sets and attributes needed to contribute to society with demands for innovation, creativity and sustainable practices that have minimal impact on our planet.
- The emergence of robotics and artificial intelligence (AI) on such a scale that the demand for humans as teachers/workers may actually be under threat.

3. Change in concept of knowledge

As evidenced by:

- Thinking more of knowledge as a set of cognitive strategies than as a 'thing' or as the goal of learning.
- The exponential rate of change leading to rapid knowledge obsolescence and rapid knowledge emergence.
- An economy that succeeds through the deployment of knowledge.
- Changes to the foundation of knowledge-generation, from being the

domain of academia to recognising the importance of peer-based knowledge, community knowledge and cultural knowledge.

4. Shifts in the ownership of learning

As evidenced by:

- Increased learner agency with learners also being teachers within the environment.
- Increased emphasis on learner-centred approaches, including self-directed, self-determined and self-managed learning.
- Increased emphasis on the importance and acknowledgment of student voice and open opportunities for expressive outcomes.
- Development of learning environments suited to collaborative practices.

5. Increased focus on culturally responsive practice

As evidenced by:

- Recognition of local languages, cultural practices and history within the national and local curriculum.
- Prioritising bicultural and multicultural perspectives over a dominant culture discourse.
- Valuing place-based knowledge and history (the cultural narrative).
- Using both indigenous and western epistemologies, research methodologies and ways of learning.
- Deliberate provision of opportunities for students to strengthen their own connection to their language, culture and identity which will in turn support teachers to respond to their learning needs.
- Engaging students with learning in, through and about their own culture, as well as the culture(s) of the country they reside in.



What examples of this can I see?

The shift to *innovative learning environments* (ILEs) that make greater use of *open space*, and encourage *collaborative pedagogical practices* is evident across all levels of the system. While *not all agree* with this move, it certainly reflects a similar trend in *workplaces* where companies seek to achieve similar lifts in performance and productivity as they address the challenge of a constantly changing work environment. Teachers working in ILEs need to learn *different ways of interacting more closely with peers, and with a wider range of students*. This calls for adopting different roles from when they worked alone, having their own classroom with their own students.

See, for example:

- *Wairakei School's "Learn it Prove it" approach*
- *Ten Innovative strategies for innovative learning* - TeachThought
- *Transform curriculum and teaching practice* - Dr Wendy Kofoed

The economic drivers of education require consideration of the future workforce, especially those brought about by rapid advancement in technology and the increased use of automation, including the use of robots and AI. Teachers must be prepared to focus on developing capabilities such as resilience in young people to cope with the immense change they will experience, and less on the specific content to be delivered in the curriculum.

See for example:

- *Technology, jobs and the future of work* - Forbes
- *Preparing today's students for tomorrow's world* - Government of New South Wales



The work of teachers itself does not escape this threat, with the increase of intelligent tutoring systems and AI-supported training systems providing high quality, personalised learning for students already. Virtual assistants, chatbots and e-learning platforms are beginning to lead to more adaptive, personalised learning for students. This is likely to have a bigger impact in future as bots and personal assistants that use AI and natural language become embedded and ubiquitous.

See for example:

- *Why robots could replace teachers as soon as 2027* - World Economic Forum
- *Should technology replace teachers?* - William Zhou | TEDxKitchenerED

With the change in how we think about knowledge comes the need to think very differently about how we think about curriculum, and the role of the teacher. More than before, the emphasis on inquiry-based learning and pedagogical approaches such as constructivism and constructionism will need to prevail, allowing for authentic, student-led, knowledge-construction activities to be the way the curriculum is led.

See for example:

- *Leading Curriculum Innovation in Practice*
- *Building cultural knowledge* - Educational Leaders

The shifts in ownership of learning being experienced in a range of learning environments at all levels, requires the most significant and intentional change in teacher role. While the role of instructor will continue to feature for a part of the time, a broader range of strategies will be required. Building the capability of students to self-manage their learning is vital here, with questions such as: What do I need to learn? Why is this important for my learning? How will I learn this? How will I know when I have learned this?

See for example:

- *Changing role of the teacher, what the research indicates* - p21
- *Learning stories - teachers as learners* - NZC
- *The concept of Ako* - TKI



How might we respond?

So what are the new roles and responsibilities of teachers as we shift the ownership to the learner and personalise learning experiences? How do we make these significant changes to a more learner-centred and learner-driven paradigm?

Some questions to help you think about the next steps:

1. Consider the case for change laid out in this trend, what do you agree with? What do you disagree with? How would you describe the key attributes required by teachers to meet the needs of our students, now and into their futures?
2. Why is the idea of personalisation appealing for your students, your faculty, your school? What is your vision for personalisation?
3. What examples of this change in role are already evident in your context? How might these become common features of how teaching and learning occurs?
4. What things might you have to 'let go' in order to effectively make some of these changes? Where might you start, personally and collectively?
5. What are the consequences for your students of NOT responding? What might the impact on their learning and their futures be?
6. If you are appointing new teachers what are the attributes you are looking for?



Links and resources

OECD | Educational Research and Innovation | Teachers and Designers of Learning Environments | The Importance of Innovative Pedagogies

OECD | Educational Research and Innovation | Teachers and Designers of Learning Environments | Identifying Clusters of Pedagogical Approaches

ASCD (Association for Supervision and Curriculum Development) | Let's Celebrate Personalization: But Not Too Fast

OECD | Innovative Learning Environments Project | The Nature Of Learning

Tech's role in learner-centred education - Executive Director of Education

PWC NZ | News Release 2018 | New Zealand among the most prepared countries for the coming waves of automation

PWC Full Report | How will automation impact jobs? Analysis of the waves and impact of automation

NZ Herald News Article 2018 | Fears about artificial intelligence are 'very legitimate,' Google CEO says

Ministerial Advisory Group | Tomorrow's School Education Taskforce | Education Conversation | Kōrero Mātauranga

United Nations Sustainable Development Goals | About the Sustainable Development Goals

Core Education | Ten Trends 2018 | Shifting The Ownership of Learning

Core Edtalks | Culturally located spaces for Māori students

Core Edtalks | Giving mana to Tiriti o Waitangi in our schools

Mana: The power in knowing who you are | Tame Iti | TEDxAuckland

Why cultural diversity matters | Michael Gavin | TEDxCSU

Ann Milne; Colouring in the White Spaces: Reclaiming Cultural Identity in Whitestream Schools

PROCESS

Micro-credentialing



Historically our ability to have our learning recognised has depended on completing large ‘chunks’ of learning that are determined and packaged up by the providers of that learning. Micro-credentialing returns the ownership to the learner, and allows them to map their own pathway through the things of interest to them, and have it recognised in a transferrable way.

What’s this all about?

Historically our ability to have our learning recognised has depended on completing large ‘chunks’ of learning that are determined and packaged up by the providers of that learning.

Micro-credentialing returns the ownership to the learner, and allows them to map their own pathway through the things of interest to them, and have them recognised in a transferrable way. Think of the badges earned in Guides or Scouts. The individual is able to pursue the area(s) of particular interest to her/him, and the criteria for earning the “badge of learning” is made explicit.

Micro-credentials are, at their core, certifications offered for taking courses and developing skills in specific areas. Various called badges, nano-credentials or nano-degrees, these [credentials](#) [promise recognition](#) for workforce upskilling and reskilling.

Micro-credentials are becoming widely used across tertiary, business, and other education providers. In 2018 [NZQA ran a pilot programme](#), working alongside Otago Polytechnic, The Lion Foundation Young Enterprise Scheme (YES), and Udacity to co-create programmes that ensure the skills taught could be validated by micro-credentials, and aligned with those deemed essential by employers of the future.

At a first glance, digital badges may simply appear to be a visual representation of a person’s skills, knowledge, competencies, and achievements. However, part of the richness to open digital badges is the evidence that sits in behind each badge detailing the learning. This ‘metadata’ displays information that records the badge issuer, the date issued, and the criteria required to earn the badge. Open digital badges enable the badge earner to link to artefacts that contributed to the badge such as research, inquiry, reflections and videos, all of which adds robustness to the badge.

The role of competency-based, bite-sized, personalised and on-demand learning is well *recognised as being vital* for the ongoing professional development of staff in their workplace. Finding a way to motivate staff to engage in professional learning, as well as capturing such learning, its credibility, and its impact on an individual's practice is an increasing requirement for staff and employers.

What's driving this change?

Micro-credentialing is a reflection of the shift to a 'learner-centric' approach in education, moving from the provision of large 'packages' of learning in the form of qualifications to a demand-side focus for learning that meets current needs and do not require participation in traditionally larger, time-bound courses. A summary of what is driving this change follows:

- Micro-credentials provide a way of offering recognition for 'bits' of learning, instead of applying only to full 'courses', and enables education providers to be more agile in the way they respond to emergent demand from customers.
- Learners can generate a portfolio or backpack of badges, which is shareable with new employment settings, regulatory bodies, or their employer to promote the range of skills offered by their staff.
- The *Mozilla Backpack*, for example, makes it easy to earn badges from multiple sources, both online and offline, then sort them into categories and choose where they're shared, through a single interface.
- An aggregation of micro-credentials within a portfolio can be transferred between organisations, and recognised toward higher qualifications by degree-granting organisations, providing a scaffolded way for teacher-learners to achieve their higher qualifications.
- The data behind the badge gives it credibility as it includes the information needed to determine its validity, authenticity, source, and value, such as the name of the individual or organisation taking responsibility for issuing the badge, and the requirements for earning the badge.
- The Mozilla Foundation developed an open technical standard called *Open Badges* in 2011, which has served as a common system for issuing, collecting, and displaying digital badges across various websites and non-profit organisations. Contextual information like "what the badge represents, how it was earned, when they earned it, who issued it" is critical to the definition of a badge in this standard.

What examples of this can I see?

- The New Zealand Qualifications Authority (NZQA) *recently conducted a micro-credential* trial and has now introduced a *micro-credential approval process* as part of New Zealand's regulated education and training system.
- *Melbourne University* is currently exploring the emerging use of micro-credentials as a means of certifying attainment of smaller and more specific elements of learning than are attested to by a degree.
- The University of Melbourne has also joined forces with US-based *Learning Machine* to *pilot a blockchain based system* to share and verify micro-credentials.
- *Udacity* aims to reinvent education for the 21st century by bridging the gap between real-world skills, relevant education, and employment. They offer *nanodegrees* developed in collaboration with industry partners (such as Google, IBM, Facebook, MailChimp) and seek to provide skills in demand in short-course form.
- *RMIT* is providing *industry-relevant digital credentials* designed with employers and industry to help individuals develop skills and capabilities for life and work. The digital badges provide a web-enabled record of professional skills that are increasingly valued and recognised by employers.
- US-based Digital Promise is committed to *sharing their stories* to show how micro-credentials can support powerful learning.



How might we respond?

Some questions to help you think about the next steps here include:

1. How do staff in your organisation currently gather evidence of their learning as required for teacher / kaiako registration? Are there any experiences that contribute to this learning that aren't currently able to be 'recognised' in any tangible way? How might the use of micro-credentials and digital badging make this process more straight forward and meaningful?
2. How might micro-credentials provide opportunities for some learners who don't currently experience success in our high stakes examination system? Are there ways you could experiment with this in your context, providing recognition for those 'bits' of formal and informal ākonga learning?
3. What are the current barriers/obstacles to introducing micro-credentials into your context, for staff and/or ākonga? What would it take to address these things and enable change?

Links and resources

E- Learning Industry | Digital Badges: What Are They And How Are They Used?

UDACITY | Discover your future in our programs

The Foundation for Young Australians | Lifelong Learning and Reskilling | The promise of Micro-credentials

CIO magazine (Chief Information Officer) | IDG Communications | University of Melbourne trials blockchain micro-credentials for lecturers

The University Of Melbourne | Micro-credentialing

Digital Promise | Accelerating Innovation in Education | Digital Promise has designed a framework to guide the development of each micro-credential

Digital Promise | Micro-credentials in Action

NZQA (New Zealand Qualifications Authority) | Mana Tohu Matauranga O Aotearoa | Approval of micro-credentials

Edutopia | Micro-Credentials: Empowering Lifelong Learners

NZ Herald | New Zealand Media and Entertainment | Badging - a new way to personalise learning | News Article

Careers NZ Mana Rapuara Aotearoa - Micro-credentials: a parent's guide

PROCESS

Big data / small data

The super abundance of data, and the ability of AI to process this is driving a lot of decision making at all levels. But what about the small data that relies on the knowledge and judgements that are made by people on an instance by instance basis?



What's this all about?

We live in a world characterised by an unprecedented amount of data. It is being collected, measured, reported, and analysed everywhere we look, and in places where we don't even realise it's happening. This growth has occurred since the development of databases capable of storing large volumes of data, and is growing exponentially with the design of even larger data storage units linked to an increasing range of tools and mechanisms for capturing data. Businesses, schools / kura and governments create new data on a daily basis. In addition, every time we send an email, post on social media or search an online website we are contributing to this vast store of data.

Data that is gathered and stored in this way is referred to as 'big data'. Having access to big data enables us to do searches, compare information, and see correlations and trends in ways never before experienced. We've become used to seeing the modelling of complex weather patterns on the evening news, predictions made about election outcomes, or movements on the stock exchange, all made possible because of big data.

Big data is a massive volume of data that moves too fast and is too large and complex to analyse and process without the use of very sophisticated technology. Every day, big data systems gather billions and trillions of items of information from millions of people from a range of sources such as web analytics, social media, customer service information and mobile phone applications and services.

This data is referred to in two ways:

1. **Structured data** has a pattern that makes it easily searchable such as audio, video and social media information. It is stored using established data sets (e.g. the way a phone book is organised, or the student data on a school SMS) and so is quite straightforward to analyse.
2. **Unstructured data** includes dates, numbers, and facts and can be human or computer-generated. An example is an email where the body of text in the message field follows no set pattern and so traditional analytics cannot analyse it. But as technology develops, so too is the ability to scrutinise these seemingly ‘random’ pieces of data and report back in ways that show patterns, trends, and make predictions.

While the use of big data provides a number of benefits, there are a number of concerns to be acknowledged here, including:

- **Privacy** - the ability of an organisation or individual to determine what data in a computer system can be shared with third parties.
- **Security** - the process of protecting data from unauthorised access and data corruption throughout its lifecycle.
- **Quality** - determined by factors such as accuracy, completeness, reliability, relevance and how up to date the information is.
- **Alignment** - the way data is arranged and accessed in computer memory, allowing for future access and transfer between systems etc.

In educational settings we’re seeing an increased use of large data sets to help us make decisions about student learning. Patterns and trends in the learning behaviours of individuals and cohorts are used to predict future achievement, and to identify specific gaps that can be addressed to accelerate the learning process. The larger the data sets, and the more sophisticated the technology we use to analyse and report on them, the greater the confidence we seem to have in the insights they offer.

Whilst extremely useful in terms of the insights provided, there are some problems with relying heavily on big data and the associated analytics. Big data is great at providing us with correlations, but not that good when it comes to identifying causation, or ‘the why’. For example, analysing school achievement information may show that the students / ākonga in a particular school or kura have consistently high scores, compared to other schools, in a specific area of the curriculum, let’s say maths. Another search of the data for the students at the same school may show that a far higher percentage of students at the school wear brown shoes

than is the case for students at other schools. So, while it is accurate to observe a correlation between the two sets of data - shoe colour and maths scores - it is certainly not accurate to suggest that wearing brown shoes is a cause of better maths scores. While this illustration poses an obviously silly relationship, there are many examples where the argument for causation is made in the same erroneous way. Consider the way that school decile ratings have become a defacto measure of intelligence - i.e. the correlation between data revealing that students in low decile schools achieve at a lower level to those in higher decile schools. The correlation may be true, but it cannot be argued that intelligence or ability will be limited simply because a child attends a low decile school (causation).

This is where an argument is being made for what is being referred to as 'small data'. In education settings, small data refers to the everyday, nuanced observations and decisions made by teachers / kaiako, based on the intimate knowledge they have of learners, gathered through years of experience, knowledge of other family members, 'feel' for class dynamics, and awareness of factors affecting a student's health or attention at that moment. These moment-by-moment judgments, made daily by teachers, provide insights that are every bit as valuable as what the big data reveals.

Finnish educator and researcher, Pasi Sahlberg, explains how small data can give us tiny clues to create great impact by uncovering important relationships about teaching and learning. A perfect example of small data in centres, schools and kura is spending time with learners, understanding how they are feeling about their learning, the supports they need, and

if something is affecting their ability to learn a specific task. This includes having a deep understanding of their cultural contexts and backgrounds, so that we act in culturally responsive ways when making decisions about how best to facilitate their learning.

The important thing about this trend area is being aware of the dynamic relationship between big data and small data as described in this way, and to understand the folly of blindly relying on what the big data suggests, without taking into account the small data, like teacher judgments, that we constantly engage with as professionals. The early years sector provides a prime example. For many years early years professionals have used a simple frame of noticing, recognising, and responding when working with learners. Noticing means to be intensely aware of, and tuned into, what the learner is doing at that moment like taking account of the environment, and what others are doing. Recognising means seeing how this behaviour or accomplishment fits with what is known in terms of learning theory and of the child's own background and stage of development. Finally, taking all of this into account, the teacher responds in a way that suggests the next steps to be taken. It may be as simple as a word of encouragement to repeat the action so that through repetition a particular skill or outcome becomes embedded, or it may involve using questions to prompt the student to consider the next step they may try. This process happens many times over on a daily basis in our early years settings. It doesn't involve interrogating databases and looking at large volumes of data, it relies on insightful and informed decisions being made by a skilled professional. This is small data in action.

What's driving this change?

- **Global competitiveness**

The World Economic Forum *defines global competitiveness* as “the ability of a country to achieve sustained high rates of growth in gross domestic product (GDP) per capita.” As countries around the world seek to remain competitive in this way it is important that they have a highly skilled workforce being prepared through their education system, and will often rely on the international benchmark comparisons as a measure of their success in this.

- **Emphasis on evidence-based practice**

Evidence-based practice (EBP) has become a buzzword across all areas of Government in recent times, for example, in health, social policy, and education. With so much at stake, and with the cost of education constantly rising, the demand for gaining maximum return on the investment made is a priority for many governments and education systems. This has driven many initiatives for gathering and using data to help inform this evidence base.

- **Personalisation of learning**

Personalised learning aims to provide a more tailored education for every learner. This places great demands on teachers in a traditional setting for, even with very small teacher-student ratios, monitoring individual learning pathways becomes overwhelming. Modern, data-driven, online systems promise to provide up to the minute feedback and next steps suggestions for learners pursuing a personalised learning pathway.

- **Internet of things**

There are now more ‘things’ connected to the internet than people. Almost everything imaginable is now capable of gathering data and feeding it into a massive data store where it can be combined, organised, analysed and patterns and correlations produced within seconds. We have the potential now to track student learning habits using data from their laptops, their pens, their smartphones and watches or from cameras tracking their eye movements as they read a page, for example. All of this is happening in a continuous stream providing real-time feedback that can be used to predict learning outcomes and provide feedback to improve.

- **Data storage and processing technology**

Until recently it was difficult to imagine just how all of the data captured could be stored and analysed in a timely fashion, but with the increased capacity and capability of cloud-based data storage and processing systems, the ability to work with seemingly endless amounts of data is now commonplace. Once the ability to do this was limited by the processing speed and storage capacity of a local desktop, but now an individual's computer may now act as a part of a globally connected ‘supercomputer’, capable of processing highly complex analysis tasks in micro-seconds.

What examples of this can I see?

- **Increased use of learner analytics**

In 2017 there were six *nationally-funded case studies in New Zealand* carried out in tertiary education, of how to build an evidence-base for teaching and learning design using learning analytics data. One of the case studies at Massey University explored how data and analytics could be used to encourage students who appeared not to be engaged in their study. The project used data through a learning management system which recorded what students were viewing and doing, and time-stamped it to show when they were doing it. Learning analytics in this case supported the teachers to design more effective teaching strategies, bringing an awareness that specific students were disengaged with the material.

- **AI and personalised learning**

Developments in AI systems allow educators to bring personalised learning to the classroom and empower students to learn the best way they can. An example of a system-wide application can be seen in the *AltSchool* platform, co-developed by educators and engineers, and used throughout a network of lab and partner US schools serving pre-K through 12th-grade students.

- **Data integration projects at a national level**

The New Zealand Ministry of Education's *Student Information Sharing Initiative (SISI)* project aims to enable data within Student Management Systems (SMSs) to

travel with children and young people as they move through the education system. The ability of different technologies to exchange and share data in this way is intended to allow for more immediate and responsive decision-making on the part of educators and others who are supporting each child in his or her learning.

- **Internet of things**

Data is being captured from an increasing range of 'things' that we encounter in our daily lives, whether that be the *roads we use* or the *cities we live in* through to *gadgets we include in our homes*. These are constantly monitoring our activity and using that data to help us make decisions, and in some cases, make those decisions for us. The *AltSchool example* illustrates the application of this thinking in an education context.



How might we respond?

It's easy to feel overwhelmed by the rate of development of the technology driving much of this area. In addition, there are questions about data security and data sovereignty to be addressed, not to mention the impact of all of this on teachers and others charged with the professional duty of working with learners.

Some questions to help guide your professional discussions on this issue are:

In relation to big data:

- What use are you currently making of 'big data' to inform the design of learning in your context? (e.g. standardised test scores, LMS and SMS reports etc.)
- To what extent do you reference some of the meta-analyses around teaching and learning to inform your practice? (e.g. *Best Evidence Synthesis*, *Visible Learning*) How is this happening?
- How might you make better use of data-gathering systems to support your efforts to personalise learning for all students?

In relation to 'small data':

- Do you give enough time to communicate with students and engage in conversation to discover the things about them and their learning that matter?
- Do you and your colleagues take time to consider and address the 'small data' concerns arising from your teaching as inquiry, for example?
- How can we use small data more effectively in teachers' work, for example in overall teacher judgments?



Links and resources

*Pasi Sahlberg | If you don't lead by small data you'll be led by big data (ULearn18)
Presentation slides*

Learning Analytics 2018 | An updated perspective

Big Data is Everywhere: 5 Ways It's Used in Your Everyday Life

Webopedia | Big Data

AltSchool - USA

Wired |Inside Amazons Artificial Intelligence flywheel

Knowledge in an age of AI

Dataflog | How Big Data Can Improve Public Education

Intel Corporation | Applying Artificial Intelligence to Transform How We Learn

Hubert Labs



ECONOMIC

Human capital

Recognising the changing nature of work makes it difficult to know what specifically we ought to be preparing people for, and that we must be continually learning and changing to acquire skills and dispositions - the shift is to investing in people and recognising that human capital as essential.



What's this all about?

The concept of human capital has been around for some time. It emerged in economic writing to recognise the fact that people are viewed as crucial to an organisation's performance, rather than simply as workers who carry out set routines and activities. Economists regard expenditure on education, training, medical care, and so on as investments in human capital.

Including human capital in this list of trends stems from thinking about a future for our young people where they are more than just 'work ready' but they also understand what it means to 'be human'. This includes embracing the responsibilities we have, individually and collectively, to contribute as citizens to building a better world for all. It goes beyond developing the ability to create wealth, in a traditional sense, to considering the impact of this activity on the environment and our fellow citizens.

According to the World Bank (2018) human capital consists of the knowledge, skills, and health that people accumulate throughout their lives, enabling them to realise their potential as productive members of society. Having a comprehensive, good quality education is an important part of this, but so too is the need to consider other aspects such as health and wellbeing.



Being a productive member of society often implies being equipped to contribute to the world of work. Many jobs today, and many more in the near future, will require specific skills, including a combination of technological know-how, problem-solving, and critical thinking as well as competencies such as perseverance, collaboration, and empathy. The changing nature of work makes it difficult to know exactly what we ought to be preparing people for, or how we should be doing that.

We can no longer sustain a ‘front loading’ approach to preparing for the future, instead we must keep learning and changing to acquire skills and dispositions that meet the needs of different contexts and emerging opportunities. The days of

staying in one job, or with one company, for decades are waning. In the future workers will likely have many jobs and roles over the course of their careers, which means they will have to be lifelong learners.

The implications of this perspective for kaiako, teachers and education leaders will be seen in what happens in our educational institutions, most noticeably in the curriculum shifts from knowledge acquisition to building global competencies for example. It will also be seen in the move to a greater degree of collaborative activity within and between our institutions, as human capital is best measured in the collective sense rather than in individuals.



What's driving this change?

There are several factors driving this change, including

1. Personalised learning
2. Worker health
3. Nature of work
4. Technology

Personalising learning

The traditional model of education, born out of the industrial age with a one-size-fits-all approach, does not meet the needs of our knowledge economy. We can do much more to give the next generation a personalised educational experience that equips them with the skills, values, characteristics, and knowledge they need to thrive in contemporary society.

The increased focus on learner-centred approaches and personalised learning initiatives in our education system is indicative of the change driver here. This extends beyond increasing the capabilities of individuals, to understanding the human capital potential that exists within and across the group.

Worker health

Concerns about worker health and safety used to focus almost exclusively on the physical aspects of exercise and diet, together with how best to avoid physical injury at work. After all, a fit and healthy workforce provides maximum return on investment! While these things are still important, contemporary workplace wellness programmes also cover mental, emotional and spiritual aspects. Many programmes are multi-faceted, encompassing areas such as

energy management, financial wellbeing, altruism, life-work balance, and connecting with passion and purpose.

Nature of work

As society becomes more complex, and the notion of 'work/employment' no longer means a 'job for life', we need to think more critically about what it means to be a citizen, and how we might contribute to society in ways that aren't tied specifically to the traditional idea of 'work'. When organisations or countries invest in their people, it increases the opportunity for people to reach their own potential, look after their families, and ultimately help their community to grow and prosper.

Technology

Technology has varying impacts on skills and the demand for them in the labour market. It also creates opportunities for us to participate more broadly in society. Organisations and governments across the world are recognising these opportunities, and paving the way to create new jobs, increase productivity, and deliver effective public services. Organisations can grow rapidly thanks to digital transformation, expanding their boundaries and reshaping traditional production patterns. Depending on the technology some skills, and the workers who have them, are gaining greater relevance. Advanced skills like innovation, complex problem-solving and critical thinking are sought after in labour markets. People with these skills can work more effectively with new technologies. Socio-behavioural skills like empathy, teamwork, and conflict resolution are also becoming more valued because they cannot be easily replicated by machines.

What examples of this can I see?

Many examples of this trend are emerging, from local organisations and communities through to the work of governments and global agencies.

At a global level the World Bank has recently released its [Human Capital Index \(HCI\)](#) which measures the amount of human capital that a child born today can expect to attain by age 18. The HCI conveys the productivity of the next generation of workers compared to a benchmark of complete education and full health. It has been constructed for 157 countries ([including New Zealand](#)) and is made up of five indicators: the probability of survival to age five, a child's expected years of schooling, harmonised test scores as a measure of quality of learning, adult survival rate (fraction of 15-year olds that will survive to age 60), and the proportion of children who are not stunted to develop high-order cognitive and socio-behavioural skills.

At a local level companies and educational institutions are becoming increasingly aware of the value of the human capital of its employees and are making strategic decisions to invest in developing this further. For instance, schools / kura that provide mentoring programs for staff at every stage of their career, illustrate that they care about staff development now, and into the future. Professional development programmes tied to a career growth plan is another way to renew and develop human capital. Traditionally schools have left that responsibility to the individual staff member which tends to result in them looking for options outside the school to grow and learn. Linking professional development to an organisation's strategic intent benefits

both the individual and the organisation.

Responses to the changing nature of work, brought about by developments in technology, can be seen in the [Digital Technologies and Hangarau Matihiko](#) curriculum content released last year in New Zealand. This is a direct response to the demands from industry groups to increase the human capital of New Zealanders in terms of the range of skills and competencies involved in working with digital technologies. It is a reflection of what is happening at a wider level through the work of organisations such as [NZtech](#) and the [NZ Tech Alliance](#).

Alongside this emphasis on specialist skill and knowledge development is the focus that many organisations now place on the wellbeing of staff. Groups and initiatives such as [Wellplace](#), [Wellbeing for Health](#), [Workplace Wellbeing](#), [NZ Institute of Wellbeing and Resilience](#) together with the [Mental Health Foundation](#) recognise the importance of personal wellbeing in relation to building human capital.



How might we respond?

For us to thrive as individuals, and for society as a whole to thrive, we must ensure our vision of human capital embraces all dimensions of what it means to be human, and focus beyond seeing human capital in terms of job skills and competencies.

Consider the following as starting points for thinking about how you're addressing the issues around human capital in your context:

How are you engaging with your staff, students / ākonga whānau and wider community in discussions around the future of work, and the impact this has on your decision making about what is important to learn, and how it is important to learn? How is this translating into decisions about curriculum in your context? What is being assessed and how is it being evaluated?

How are your staff, students, whānau and wider community addressing the complex issues around the impact of technology in society, and the need for everyone to achieve a high level of digital fluency to function well into the future? What programmes are you providing for teachers/ kaiako and students? How are you ensuring these allow for development beyond simple skill acquisition?

According to the [World Bank HCI data](#) (click on the interactive map of New Zealand) New Zealand children are at school for 13.6 years, but when years of schooling are adjusted for quality of learning, this is only equivalent to 11.2 years, leaving a learning gap of 2.4 years. How could this gap be closed? Are there specific areas of activity in your context that may be contributing to this gap - how might you address them?

What systems, programmes or strategies do you have in place to address the wellbeing of your school or kura? Staff and students? Do they take account of cultural diversity in your community? Who contributes to wellbeing?



Links and resources

The World Bank | Human Capital Project | Pillars of the Human Capital Project

Market Business News | What Is Human Capital? Definition And Meaning

The World Bank | World Development Report 2019 | The Changing Nature Of Work | Questions addressed in the report

The World Bank | World Development Report 2019 | The Changing Nature Of Work

Humans wanted: why automation won't kill off your job

Ministry of Education | Changes In Education | Digital Technologies and Hangarau Matihiko learning

Mental Health Foundation of New Zealand | Mauri tū mauri ora | Wellbeing | The Five Ways to Wellbeing, Ētahi ara e rima ki te ngākau ora, help people stay mentally well

Workplace Wellbeing | People work better, when they feel good. Simple



ECONOMIC

Understanding success

New ways of talking about being successful along with traditional ways of measuring success, personally and as a nation, are often linked with economic outcomes and social status. In a world where these things may no longer hold the value they once did, we need to consider new ways of thinking about success.



What's this all about?

For the last two decades “evidence-based decision-making” has been a mantra for policymakers, politicians and influential media. What is measured matters. Policymakers, educators, parents, and the public want to know if our schools are successful; they want evidence of what is working well and where the education system is falling short.

PISA states in their Handbook on Global Competence:

“Every school should encourage its students to try and make sense of the most pressing issues defining our times. The high demands placed on schools to help their students cope and succeed in an increasingly interconnected environment can only be met if education systems define new learning objectives based on a solid framework, and use different types of assessment to reflect on the effectiveness of their initiatives and teaching practices. In this context, PISA aims to provide a comprehensive overview of education

systems’ efforts to create learning environments that invite young people to understand the world beyond their immediate environment, interact with others with respect for their rights and dignity, and take action towards building sustainable and thriving communities. A fundamental goal of this work is to support evidence-based decisions on how to improve curricula, teaching, assessments and schools’ responses to cultural diversity in order to prepare young people to become global citizens.”

Traditional ways of measuring success – personally and as a nation – are often linked with economic outcomes, and social status. In a world where these may no longer hold value, we need to consider new ways of thinking about success. We need to broaden the definition of school / kura success by expanding the indicators used to measure progress towards that goal.

Many of the current local and international approaches to measuring and reporting on educational quality have tended to be limited to literacy, numeracy and science achievement. These measures are necessary but not sufficient. A growing chorus of voices is asking, “Isn’t education about more than that? Don’t we need healthy kids who can think; who are innovative and will grow up to be engaged citizens?” When there is too much emphasis on narrow goals, important priorities can be overshadowed.

The national curriculum mandates a competency-based approach. Competency-based assessment is a process where the teacher / kaiako works with the learner to collect evidence of competence, using the criteria provided in the assessment brief or in the national qualifications. It is not about passing or failing a candidate; evidence collection is more than just setting a test.

The New Zealand Curriculum defines key competencies as “capabilities for living and lifelong learning” (p.12). Using “capability” makes us focus on what students / ākonga are capable of doing and becoming, and how they use their understandings/ knowledge, skills and values in particular learning contexts. This has implications for how we think about the types of learning experiences that will really stretch students as they encounter purposeful key competency/learning area combinations.

Our understanding of some common approaches to measuring success, used in New Zealand and elsewhere, are summarised in this table. In most cases these are all represented in the approaches taken to developing curriculum, but often one may be more dominant than others:



Definition	Success measure(s)
1. Skills <p>The OECD describes three types of skills; cognitive and metacognitive, physical and socio-emotional. These are specific abilities that fit in a given situation, e.g. spelling a word, using a mathematical formula, kicking a ball, reading a paragraph, relating to others etc. A finite ability that can be used under a fixed set of constraints in a narrow set of environments.</p>	<p>Can the particular action be repeated to an acceptable standard within the same set of constraints?</p> <p>Evidence of:</p> <ul style="list-style-type: none"> • speed • accuracy • consistency
2. Knowledge <p>A belief that is true and justified, leading to assessment methods that rely largely on the correctness of answers. Involves engagement with facts, information, descriptions etc. often classified into various ‘domains’ or ‘subjects’. Can refer to a theoretical or practical understanding.</p>	<p>Demonstrating engagement with and understanding of various facts, information, descriptions etc. Including transfer and application to other contexts.</p> <p>Evidence of:</p> <ul style="list-style-type: none"> • recall/comprehension • disciplinary and interdisciplinary thinking • synthesis/analysis
3. Capabilities <p>Using knowledge, skills, competencies and values to do something in a particular context. The use of the word “capability” cues a focus on what students are capable of doing and becoming. As it applies to human capital, capability represents the intersection of capacity and ability. (Wikipedia).</p>	<p>Demonstrating deep-rooted ability which can be applied in many contexts.</p> <p>Evidence of...</p> <ul style="list-style-type: none"> • foundational literacy and numeracy • critical and creative thinking • resilience • problem solving, decision making • wellness, having deep friendships, etc.
4. Social Action <p>People coming together to help improve their lives and solve the problems that are important in their communities. Requires the application of skills and capabilities within framework of shared values and moral code.</p>	<p>Are there long-term, sustained benefits for both individuals and wider society?</p> <p>Evidence of:</p> <ul style="list-style-type: none"> • social decision making • citizenship qualities • addressing societal concerns (health, climate, environment etc.) • greater social equity, social justice • creating public value

Most schools, regions or nations are likely to use a combination of the approaches described here; the important thing is recognising where there may be a greater emphasis, and where particular characteristics are not being addressed.

For example, an over-emphasis on skills and/or knowledge at the expense of developing capabilities and transferring that into social action is likely to produce young people who are not adequately prepared to face the challenges ahead. Conversely, a programme focused on social action projects without ensuring the development of key skills, or the ability to engage with information and knowledge, may mean students have a well developed

sense of social responsibility, but lack the foundational skills and knowledge to be able to do anything about it.

But how do we measure success across all four categories? For the first two the answer is reasonably straightforward, as we have had measures for skill development and knowledge acquisition in our traditional education system for more than a century. The challenge looms when we consider how we might measure success in the third and fourth categories, where the kinds of observable, 'testable' measures cannot be applied in the same way, and where evidence of development may occur across longer time periods than a single academic year.



What's driving this change?

The following drivers are key to this trend:

1. Social/political

As the nature of work is changing, so too is what it means to be a member of a society where you may no longer just work as one of the crowd, conforming and carrying out routine and repetitive tasks. Greater diversity in the workforce means individuals are more likely to exercise their individuality in the choices they make about where they live, how they live, and who they vote for. The neo-liberal agenda that has emerged as a driver of this change over the past two to three decades has benefitted many, and disadvantaged many more. The resulting rise in inequality presents a challenge to our traditional social mores, and to the notion of democracy itself. Governments are increasingly interested in measures of success relating to the notion of citizenship, together with the desire to remain competitive in an increasingly global economy.

2. Environmental/future focused

As the global population increases we face problems of a scale and consequence never previously experienced. The impact of large numbers of people on the planet, driven by a 'consumer' mentality, has led to significant issues such as global warming, global food shortages, shortages of fresh water and so on. As Albert Einstein is quoted as saying, "we cannot solve the complex problems we face with the same level of thinking we had when we created them." A key driver now recognised by many nations, as well as various global agencies and organisations, is that the

solution to these large-scale global problems lies mostly with the changed attitudes and behaviours of every citizen, and only in part with the actions of governments and global organisations.

3. Economic

The exponential rate of change impacting the future of work and how we create and distribute wealth in our society is a key driver here. The traditional view of schools as places that prepare rangatahi / young people with a fixed set of skills and knowledge in preparation for their future careers is no longer valid. Industries and organisations are increasingly looking for people who demonstrate a wide range of capabilities that will enable them to adapt, to problem solve, to communicate new ideas, and to work in teams ahead of more traditional sets of skills and knowledge.



What examples of this can I see?

The following examples are selected to provide insights into the range of ways organisations are approaching the issue of measuring success:

- The Curriculum Progress and Achievement Ministerial Advisory Group (MAG) has recently published a [conversation document](#) in which the section on building assessment, inquiry and evaluation capability (p.16) states that all stakeholders will have the assessment information and evaluative capabilities they need to do their jobs well and we will have achieved a stronger focus on student progress across the system through rich opportunities to learn.
- The Minister's foreword in the [Digital Technologies - Hangarau Matihiko](#) addition to the Technology learning area begins with "New Zealanders are now living in a digital society. Our young people need to be confident and fully equipped to contribute and flourish in the economy of the future." The development of this curriculum content was driven to a large extent by industry requiring more young people to be prepared with future focused skills.
- The OECD is now focusing attention on the [development of capabilities](#). They define global competence as the capacity to examine local, global, and intercultural issues, to understand and appreciate the perspectives and worldviews of others, to engage in open, appropriate, and effective interactions with people from different cultures, and to act for collective well-being and sustainable development.
- In an [open letter to the New Zealand public](#), 100 NZ companies including Xero, ASB, Noel Leeming, Vector, and SkyCity, have said they would be more open to hiring those without tertiary qualifications to fill vacancies.
- [Micro-credentials are becoming mainstream](#) in New Zealand, with [NZQA recently implementing a process](#) for approving these on the qualifications framework. In a [press release](#) on this Minister Hipkins states "Maintaining up-to-date skills will become an increasingly important way to improve and future-proof employability" (August 2018).
- [Triple bottom line \(TBL\)](#) accounting is a practice being embraced by many companies. TBL is a concept that broadens a business' focus on the financial bottom line to include social and environmental considerations.
- An increasing number of schools are implementing strategies to involve students themselves in the process of assessing their work and providing evidence to support that - for example, [Stonefields School sharing Progressions](#) with learners.

How might we respond?

In our educational institutions we must think about how our curriculum and assessment strategies can be developed to address the range of skills and capabilities required for the future.

Thinking back

In order to fully understand what needs to change in our system, and where we could focus our effort we should consider the following questions:

- What is happening in your context? What have the vision and values of your school been until now?
- Have you provided opportunities for your students to “be” this vision?
- How have your assessment practices supported you to know whether you have provided these opportunities, and that \ students are confident connected actively involved lifelong learners?
- Why was the assessment carried out that way?
- What uses were intended for the assessment information gathered? What uses were actually made of it?
- How effective have these approaches to measuring success been in preparing young people for their future?

Thinking forward

Increasingly, educators, policy makers and governments are responding to a need to consider a broader set of goals that address, for example;

- academic achievement
- physical and mental health
- social-emotional development
- creativity and innovation
- citizenship and democracy

When thinking about what it means to measure success in terms of the investment we’re making in our young people think about:

- which of the areas above are your current approaches to measuring success addressing?
- what you could do in the coming year to develop learning opportunities that address those areas not identified, and what measures of success might you use to provide assurance that these things are being developed.
- Consider the four dimensions of the chart in section one. Which of these four areas dominate the assessment thinking in your context? Why? What practical steps could you take to address the others?

Links and resources

Broader Measures of Success | Measuring what matters in Education

Battelle for Kids

Automation and artificial intelligence | How machines are affecting people and places

The Four Pillars of Learning

OECD PISA (Programme for International Student Assessment) | PISA 2018 Global Competence

OECD PISA (Programme for International Student Assessment) | Preparing our Youth for an Inclusive and Sustainable World | The OECD global competence framework

NPDL (New Pedagogies for Deep Learning) | The 6 C's

Ministry of Education | The New Zealand Curriculum Online | Key Competencies

Ministry of Education | The New Zealand Curriculum Online | Local curriculum package of support for 2019

Ministry of Education | The New Zealand Curriculum Online | Reviewing Your Local Curriculum

Ministerial Advisory Group | Tomorrow's School Education Taskforce | Education Conversation | Kōrero Mātauranga | Exploring 6 Big Opportunities for NCEA.

Getting Smart | New Zealand Leads the Way on Competency-Based Learning: Part 1

OECD | Public Employment and Management | OECD Report on Skills and Capacity

Ministry of Education | The New Zealand Curriculum Online | Key competencies as capabilities

Ministry of Education | The New Zealand Curriculum Online | Assessing key competencies: Why would we? How could we?

Ministry of Education | TKI - Te Kete Ipurangi | Science Capabilities in the NZ Curriculum

NZASE (New Zealand Association of Science Educators) | Unlocking the concept of capabilities in science by Rosemary Hipkins

New Zealand Council for Educational Research (NZCER) / Rangahau Mātauranga o Aotearoa | Weaving a coherent curriculum: How the idea of 'capabilities' can help

Ministerial Advisory Group | Tomorrow's School Education Taskforce | Education Conversation | Kōrero Mātauranga | Curriculum, Progress and Achievement

Ministry of Education | Digital Technologies | Hangarau Matihiko | Draft for Consultation

Ministry of Education | Technology in the New Zealand Curriculum

Ministry of Education | Digital Technologies and the NZC brochure | Your guide to finding support and getting ready

CULTURAL

Wellbeing

As technology pervades every part of our lives, and as the impact of exponential change affects us all, the impact on our health and wellbeing is significant.



What's this all about?

Wellbeing has emerged as a hot topic across many areas of our social, workplace, and government ecosystems in recent years. While there is currently no agreed international definition for wellbeing, those who research the area agree that wellbeing is more than the absence of disease, it is a construct with many parts. In order to flourish people need to experience high levels of wellbeing.

In this trend key considerations relate to the significant influence that *technology pervading* every part of our lives, and the impact of exponential change, have on health and wellbeing.

The current New Zealand Government is *introducing a tool* to measure wellbeing as another way of determining our success as a nation. This way of viewing success is in line with calls from the OECD and the International Monetary Fund (IMF) who are encouraging the idea of looking beyond the balance sheet, and locating people and the environment at the heart of policy making.

This focus also offers mental health much needed attention. Our NZ statistics,

particularly for *youth suicides*, are shocking as a nation. We also have the second highest rate of *workplace bullying* in the developed world.

Some of the key findings from the *2016 Wellbeing and Mental distress in Aotearoa* snapshot were that 4 in 5 adults have personally experienced mental distress (from 15 years up) at some point in their lives and/ or know of someone who has; 15 to 24 years old reported high levels of mental distress and isolation. There is also a rise in anxiety in our young people that is being reported with psychologists not being able to meet the needs of and findings from the 2017 *Kei Tei Pai?* report provides an overview of the state of the Mental Health of 1762 tertiary students studying towards bachelor degrees experiencing high levels of psychological distress.

Connectedness is another important dimension of wellbeing. Current international research indicates that building a more connected society builds population wellbeing and that connectedness can in turn prevent substantial mental distress.

The *Youth 2000 survey* series which measures key protective and risk factors in home, school / kura, and community settings has established how important it is for young people to feel connected, cared for, that they have opportunities, and feel that they can be safe and free of harm. Health and wellbeing outcomes in the areas of mental health, substance abuse and sexual health have also been measured as part of the series.

It is recognised that student / ākonga *wellbeing is linked to learning*, and is vital for their success. Support for a focus on students' wellbeing exists in professional frameworks including The *Code of Ethics for Registered Teachers* and the *Practising Teacher Criteria*. There is a stronger move by increasing numbers of schools and clusters to explore what wellbeing means for their staff and students practically day-to-day.

Wellbeing is a concern of both learners and teachers. The *burnout report of principal health and wellbeing* 2017 comments that the most serious stressor for school leaders is the “sheer volume of work”. School leaders scored higher on the negative aspects of wellbeing (including burnout and stress) than the general population and less on the positive aspects of wellbeing than the general population. School leaders were also 1.7 times more likely to burn out than the general population. Work to family conflict is 2.1 times more likely than the general population, with female school leaders reporting statistically higher scores than their male counterparts.



What's driving this change?

Several factors are driving this change including:

- **Exponential change**

We are living in an age of change that can be volatile, uncertain, complex, and ambiguous (*VUCA*). Developing personal strategies and resilience to cope with this change is becoming an essential life skill, and contributes significantly to the notion of wellbeing in individuals.

- **Workload issues**

A 2017 workplace survey in New Zealand found that the economy lost 1.5 billion \$NZ due to sick days, stress, and work-related mental health issues. Speaking in world terms this is perceived as one of the biggest threats to performance in business and health, and human functioning.

- **Destigmatising of mental health**

While misunderstandings still pervade our culture's perceptions of mental health, the recent *efforts to destigmatise* this are helping to create more open and honest discussions around addressing mental health issues as a key aspect of our national wellbeing.

- **Productivity**

Wellbeing is being used as a strategy by many employers to boost their workers' productivity. For example, in-house wellness programmes for employees, diet, exercise and stress management tools are introduced in a bid to retain the workforce and also to be seen as socially responsible and caring.

- **Resource inequality**

Wealth and income inequality have a drastic impact on the kind of society we have and how healthy and connected it is. Many New Zealanders struggle to live decent lives and so do over 400,000 children who live in poverty. Inequality damages societal trust and cohesion, access to health care, and contributions to open politics and the economy.

- **Environmental action**

Environmental action involves caring for the environment we live in, providing clean warm homes for our families, clean transport, creating jobs in renewable energies, and looking after the wellbeing of our ecology and surroundings. The education of our young people in sustainable practices and responding with a long term sustainable vision is key to this.



What examples of this can I see?

- **Wellbeing as a national strategy for productivity**

New Zealand wants its politics to focus on empathy, kindness and well-being, as *explained by Prime Minister, Jacinda Ardern*, at the World Economic Forum in Davos. The current government has signalled to ministers they will need to show any new policies will improve the wellbeing of New Zealanders “across generations” if they want funding to implement them.

- *New Zealand Wellbeing Sovereign Index*

This was the first index designed to measure the wellbeing of New Zealanders to provide a snapshot of how individual's fared both personally and socially.

- *Canadian Index of Wellbeing*

Canadians identified a weakness in solely relying on GDP to measure how the country was faring. They developed the Canadian Index of Wellbeing to measure quality of life for the people, environment, democracy, and other aspects of wellbeing that Canadians value.

- **What is Positive Education?**

Positive Education sees the intertwining of character and the science of wellbeing with teaching and learning. As part of the Christchurch rebuild, local stories of schools are emerging through Grow Waitaha, a programme that supports schools through the process of change happening in Canterbury.

- *This story describes the 2017 implementation of a schoolwide wellbeing programme: Flourishing @ Avonside.*

- *Christchurch Girls High School look at how they can improve student wellbeing by increasing personalised learning and greater student agency through digital technologies.*

- *Hagley College*

- *Halswell School
Play based learning*

- *In Australia Geelong Grammar School shares their journey of using the science of positive psychology with best practice teaching. The site includes a range of positive education film clips, framework models, and key concepts which are downloadable.
<https://youtu.be/9GPss6swg88>*

- **Wellbeing for success - a resource for schools**

Developed by the Education Review Office, *Wellbeing for success: a resource for schools* has been developed to help schools evaluate and improve student wellbeing. It highlights the importance of schools promoting the wellbeing of all students as well as the need for systems, people and initiatives to respond to wellbeing concerns for students who need additional support.

- **Wellbeing and Deep Learning: What we Know**

A *report from the global New Pedagogies for Deep Learning (NPDL)*, a global collaboration involving 40 New Zealand schools, identifies links between wellbeing and deep learning. The researchers identified three themes required: students need to feel safe, they need to feel significant, and they need to feel a sense of purpose.

- **Educator's Wellbeing Toolkit**

The Educators' Wellbeing Toolkit assists individuals to proactively manage their own wellbeing and provides strategies for professional communities to better understand and support each other. Highly flexible delivery ensures the Wellbeing Toolkit can be undertaken with minimal impact to existing staff responsibilities.

- **He Kākano - Live to Learn**

This is a co-design framework to create learning environments that meet the needs and aspirations of Māori. It seeks to create a blueprint for change for a national education system that improves hauora Māori. He Kākano is also facilitating the re-design of curriculum and pedagogy, including alignment with current Māori-specific NZQA national standards.

The flagship has been developed in partnership between Healthy Families Manukau, Manurewa-Papakura, Manurewa High School and Toi Tangata.

- **All Right?**

All Right? is a Healthy Christchurch initiative led by the Canterbury District Health Board and the Mental Health Foundation of New Zealand. The aim of the initiative is to help Cantabrians live brighter.



How might we respond?

Promoting the understanding of wellbeing

- What does wellbeing look like and feel like?
- Moving wellbeing beyond the idea of pastoral care
- Having shared understandings of what mental health and mental wellbeing is

Taking responsibility personally

- What areas of personal wellbeing do you need to work on? For example, do you need to make sure you get 8 hours sleep, eat well, get adequate exercise, move from reflecting on work to reflecting on yourself?
- How do you choose to manage your energy throughout the day?
- How do you choose to experience moments in your day where you can really connect with someone?
- How do you find time in your day where you can receive feedback and positive feedback?

Responsibility with and for others

- How might you create the space to connect with others, to cultivate relationships and get to know each other?

Improve systems support for school leaders

- How might boards of trustees look after their school leaders and other staff?
- With the review of Tomorrow's Schools what could governance look like in terms of change to minimise the impact on leaders?
- What might more regular coaching or mentoring support look like for leaders?

Improved professional support for staff

- How might workload be better distributed in your context? i.e. staff meetings, shared planning, and access to the resources?
- What might employee's job security look like?
- What might more regular mentoring support look like for staff?
- How might we support staff to better deal with the emotional demands in their work?
- How might we support our teachers to deal with the highs and lows of their students and parents?
- What professional learning opportunities might you consider to ensure all staff are adequately informed and supported? (consider the CORE wellbeing toolkit here)

Links and resources

Healthy Promotion Agency (HPA) | Nau mai whakatau mai ki Te Hiringa Hauora | Wellbeing and Mental Distress in Aotearoa New Zealand: Snapshot 2016

Kei Tei Pai?

Newshub|Psychologists struggling to cope with youth anxiety in New Zealand

Education Review Office (ERO) | Te Tari Arotake Mātauranga | Wellbeing for success: a resource for schools

NZEI Te Riu Roa - New Zealand Educational Institute (NZEI) | Principal Health & Wellbeing Survey - Burnout

Education Review Office (ERO) | Te Tari Arotake Mātauranga | Improving Guidance and Counselling for Students in Secondary Schools

New Zealand Government | The New Zealand Treasury (Māori: Kaitohutohu Kaupapa Rawa) Budget 2019: Focus on wellbeing.

Stuff | New Zealand has world's second highest rate of workplace bullying

Forbes | 2019: These Three Wellbeing Trends Are Here



CULTURAL

Cultural narratives

Cultural narratives are increasingly recognised as powerful enablers in connecting our past to the present, situating us in the context of the places we co-inhabit, and recognising the influences of people, places, time and events in shaping who we are.



***‘Hai aha au te mate noa ake ai,
kai taku pākārito ka tupu, ka ora’.***

He whakataukāki nā Tūnohopū

What’s this all about?

A cultural narrative describes what is unique about the place and the people your educational setting is part of. In the New Zealand context, a cultural narrative recognises the histories of and by mana whenua (tribes who have territorial authority over land), their sacred places, their interactions with the land and their ways of being as a people. It helps build a common understanding of their values, their heritage and their traditional and spiritual connections to the land and the environment. Cultural narratives are increasingly recognised as powerful enablers in connecting our past to the present and acts to build a platform to a sustainable future. They enable schools to situate themselves in the context of the places they co-inhabit, and recognise the influences of people, places, time

and events in shaping who we are. When learners are enabled to make connections to where they live, when they create links to significant events, people and the land, they develop a sense that they are part of a larger story. As such, cultural narratives are as much for non-Māori as they are Māori. They help learners examine knowledge, issues and events from where their feet stand first, in their local environment.

Part of our Aotearoa national story that contributed to the relative invisibility of Māori heritage, language and culture in education started with the [1867 Native Schools Act](#). This act established a system of English only secular village primary schools charged to [assimilate Māori into Pākehā society](#). Over time this led to a

loss of language, culture, identity and with it, cultural stories. A leading Māori author, [Patricia Grace](#) said *“If there are no stories, or not enough stories that tell children about themselves but only tell them about others then those children are being given the message that they are not worthy of affirmation in literature, in stories, in media. They become the invisible ones, the marginalised.”* (P. Grace, personal communication, August 28, 2017)

The negative impacts of the Native Schools Act is still felt today evidenced in disparate achievement of Māori learners and engagement with their whānau (families). It is the role of education to reverse this legacy. In the blog [Engaging Māori students and whānau in future-focused education](#), Janelle Riki-Waaka challenges educators saying “It is not a privilege to be connected to the place you go each day. It is a right! Kids deserve to go to school and know they are home. If someone stood in your school, how would they know they were in a school in Aotearoa? How are we enabling our children to be Māori? What would we hear, see and feel that sends the message, ‘We value and will celebrate your culture here?’

The Cultural Narratives of the mana whenua embodies the essence of who they are. It supports authentic engagement with whānau, hapū and iwi, because it invites all these groups to not only contribute their stories, and invites them to be able to participate as mana whenua on their lands their tamariki are educated on. To know the stories of a people is surely to know the strength of who they are. This will enable a more inclusive culturally responsive way of working with Māori and help address the disparities and barriers that exist for Māori within the education system.



What's driving this change?

Localising the curriculum & culturally responsive practice:

In New Zealand each educational setting is charged with co-constructing a localised curriculum with their communities to enable learning that is meaningful, relevant, and connected to students' lives. Culturally locating your educational setting is pivotal in creating a culturally responsive curriculum that resonates with the aspirations of mana whenua, whānau and their tamariki. No matter the setting, one common theme reverberates – a sense of belonging, identity, language and culture are at the heart of Māori student success as well as success for all learners.

Māori Success as Māori is best expressed by Professor Mason Durie (2003) as, “Māori being able to have access to te ao Māori, the Māori world – access to language, culture, marae, tikanga and resources. If after twelve or so years of formal education, a Māori youth was totally unprepared to interact within te ao Māori, then, no matter what else had been learned, education would have been incomplete.”

When we culturally locate our curriculum in the context of cultural narratives, our learners will have access to build a stronger sense of identity, language and culture. For a school in Aotearoa New Zealand, embracing the cultural narrative of mana whenua represents a commitment to an enduring partnership that is built through open conversations consistent with two world views. It shows you recognise the status of mana whenua, you value their knowledge and ways of being and therefore schools who embrace these stories are upholding their place in the treaty partnership, giving mana and giving value to the Treaty.

Enacting the Tiriti o Waitangi:

The process of uncovering and integrating a cultural narrative is a key tool in Māori achieving success as Māori, a key outcome of *Ka Hikitia*, and thereby enacts the articles of the *Tiriti o Waitangi*.

- Article 1, Kāwanatanga - Honourable Governance: The process affirms and values the place of Māori as tangata whenua. It necessitates collaboration with mana whenua and whānau, creating powerful and enduring partnerships based on shared decision making. This is at all levels of governance, senior leadership and in every day to day planning.
- Article 2, Rangatiratanga - Agency: The process provides a mechanism for Māori students and their whānau to assert rangatiratanga or the agency, voice and choice over what and how Māori identity, language and culture is reflected in the curriculum.
- Article 3, Ōritetanga - Equity: The process enables equity for learners to access a curriculum that makes sense for them from a dual heritage relevant to place. They can access Māori and non-Māori knowledge systems, ways of being and learning and histories that produce an equitable outcome.
- Article 4, Wairuatanga - Spiritual beliefs & practices: Article 4 is the spoken promise. It allows Māori the right to promote and protect tikanga (protocols), Māori spiritual beliefs and connections as well as knowledge systems underpinned by te reo. All these aspects are inherent in the cultural narrative.

What examples of this can I see?

The examples below illustrate how cultural narratives are being used both nationally and internationally:

In Canterbury, local Ngāi Tahu rūnanga, supported by the Ministry of Education, have worked with regional clusters of educational institutions to develop a series of cultural narratives as evidenced in the following examples: *Haeata Community Campus*, *Rāwhiti School*, *Sumner School*, *University of Canterbury*. These narratives provide insight into the cultural history of where these educational institutions are located and allow elements to be integrated in the design of new or existing institutions. Influences in design here include both physical aspects such as buildings and planting as well as non-physical, such as curriculum, values and kaupapa. These cultural narratives tell the story of the land itself, the soil structure, flora and fauna. This allows for centres of education to foster values such as kaitiakitanga (guardianship) and sustainability over the local area. There are also facilitators available under *Mātauraka Māhānui*, who represents mana whenua interests, who support schools to embed the cultural narratives and develop more culturally sustainable practices.

In her blog *Hūmarie, an authentic response to cultural location* Maria Tibble talks about the role of the curriculum designer in developing a marau ā-kura (localised curriculum in Māori medium) that resonates with the voice and aspiration of whānau hapū, and iwi. At the heart of the work is the child, a future leader of the iwi. It is the role of the facilitators of this work to design, craft, and shape a curriculum

that leaves whānau in no doubt about what it means to achieve as Māori, feel success as Māori, and to know, do, and be as Māori in their eyes.

In the design of marau ā-kura (localised curriculum) the following examples show the centrality of the cultural narrative. *Te Kura o Tākaro* base their marau ā-kura on the cultural narrative embedded in the landscape. The mountains, the land, the rivers and the wildlife are metaphors for values, dispositions, inter-tribal connections as well as contexts for learning.



Likewise *Waimirirangi bilingual unit at Whangarei Intermediate* developed their marau ā-kura based on cultural location permeated with local reo, local contexts for learning, and local history showing that the ākonga stories and their history matter. Understanding the attributes of their tīpuna and the many skills and talents those tīpuna had, helps students understand themselves. It allows for generational history to become part of a living story.

Te Rangihakahaka Centre for Science and Technology is Ngāti Whakaue's newest education initiative with a curriculum based on science, technology, engineering, arts and mathematics: STEAM. The centre is named Te Rangihakahaka after a significant site on Mount Ngongotahā. It is a reference point for their people as they aspire to great heights. The content is localised and contextualised, drawing on mātauranga Māori (Māori knowledge) and is committed to the development of Ngāti Whakaue language and culture. <https://terangihakahaka.school.nz/>

Valuing cultural locatedness indigenous cultural narratives is also evidenced internationally in Alaska. Alaska Native educators developed the Alaska standards for culturally responsive schools to provide guidelines for schools as they examined how their practices impacted on the cultural well-being of their learners. These “cultural standards” are founded on the belief that “a firm grounding in the heritage language and culture indigenous to a particular place is a fundamental prerequisite for the development of culturally-healthy students and communities associated with that place, and thus is an essential ingredient for identifying the appropriate qualities

and practices associated with culturally-responsive educators, curriculum and schools”. <http://ankn.uaf.edu/publications/standards.html> The standards challenged educators to:

- incorporate local ways of knowing and teaching in their work.
- use the local environment and resources on a regular basis
- link their teaching to the everyday life of their students
- participate in community events
- work closely with parents to create synergies in educational expectations between home and school



How might we respond?

If you were asked “what are the stories that identify you with kiwi culture”, what would spring to mind? Take a moment to think about what and whose stories you would share. Would it be narratives of number eight wire innovation; overcoming challenges like Sir Edmund Hillary, or stories of determination like Kate Sheppard leading the right for women to vote? There are many stories woven into the fabric of our collective history. However if we only teach these types of narratives are we teaching a balanced view of who we are as a people in Aotearoa New Zealand? Stories matter. Telling a balanced view on whose stories we share matters. What voice is given to Māori cultural narratives in your educational setting? How can schools use a localised Māori cultural narrative as a catalyst to enact the Treaty of Waitangi, build powerful whānau and community partnerships and improve all student engagement and achievement?

Within Aotearoa, when considering how you might take on the journey of uncovering a cultural narrative and integrating it in meaningful ways, you could consider the following.

How could a cultural narrative be surfaced with mana whenua?

- Walk outside, place your feet on the ground and ask how well do I know the cultural histories of this piece of earth that lies underneath my feet?
- Create a long and respectful relationship with mana whenua and their kaumātua (respected elders). These people are essential to the entire process of creating a cultural context. The link to these people could also be within the students in your school.
- Identify with mana whenua key ancestors, geographical features, important events, tribal songs, reo (language) that is unique to the people.
- Consider the work around *Place-based Education* which invites learners to understand themselves in their local environment, it's past, their present and how they can impact their future.
- Research the environment elements of the area, it's native flora, fauna and land and soil uses and changes.

How could the cultural narrative be integrated?

- Commit to exploring with mana whenua and whānau possible learning contexts and or learning experiences that relate to the cultural narrative
- Commit to visiting the local marae and mana whenua in their spaces/environment, as well as their places of significance
- Consider how the cultural narrative will inform the design in new modern learning spaces as culturally inclusive learning spaces that are flexible with indoor and outdoor connectedness.
- Develop māra (gardens) with native plantings associated to the area in keeping with the geography and landscape as well as use and purpose such as edibles and medicinal qualities (Rongoā)
- Consider how the cultural narrative will inform the sustainable use of land from an infrastructure as well as an inquiry based curriculum with students. This could include focuses on bio control, biodiversity and environmental resilience and protection.
- Utilise Māori or dual names for significant buildings, areas and amenities or projects imbued considering the identifiers of local native flora and fauna Hornby cultural narrative.
- Commit to explore with mana whenua and whānau ways of teaching and learning and ways of assessing that are strengths based and are preferable to whānau and students. For example, the use of *Story Hui* as model of telling success in story narrative is an effective way of identifying impact and next steps.



Links and Resources

Maria Tibble | Edtalks Culture Counts in the Classroom

Ann Milne | Colouring in the White Spaces | (Colouring in the White Spaces - Ann Milne PhD. Blog post by Aiono Manu Faaea-Semeatu)

CORE Education | CORE Blog| Engaging Māori students and whānau in future-focused education | (From the uLearn 16 blog: a review by Nichole Gully of Janelle Riki's presentation)

CORE Education | CORE Blog| He kōrerorero, he whakaaro| Phoebe Davis: Blog | Our history matters to our learning

CORE Education | CORE Blog| Hōhepa Isaac-Sharland | Tō reo ki te raki, tō mana ki te whenua

CORE Education | CORE Blog | Learning to crawl in the Māori world | Rebbecca Sweeney

CORE Education | CORE Blog | Maria Tibble: Blog|Hūmārie – an authentic response to cultural location

CORE Education | CORE Blog| Maria Tibble: Treaty of Waitangi | 178 years of Treaty | What has been the intergenerational impact on your local iwi?

CORE Education | CORE Blog| Whytangi: Wai celebrate the treaty? | Rosalie Reiri

Durie, M. Ngā Kāhui Pou: Launching Māori Futures. Wellington: Huia Publishers, 2003.

Ministry of Education| Educational Leaders| Embracing Cultural Narratives

Grow Waitaha | Cultural Intelligence and Ngāi Tahutanga

Grow Waitaha | Growing culturally responsive practice in Innovative Learning Environments

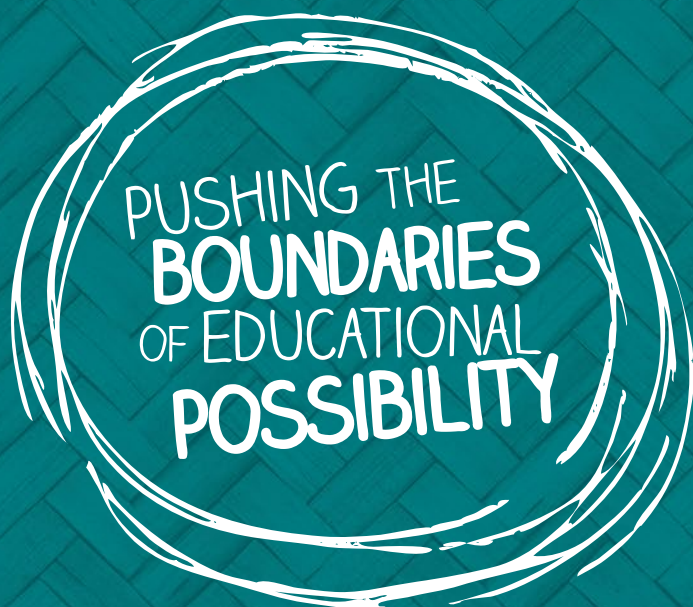
Grow Waitaha | Mātauraka Mahaanui

Hana O'Regan: Tō reo ki te raki, tō mana ki te whenua

*TKI | TE KETE IPURANGI | Māori HistoryMāori History in the NZ Curriculum
Place based education & learning of Māori History | Wally Penetito*

TKI | TE KETE IPURANGI | Māori History in the NZ Curriculum |Te Takanga o te Wā - Māori History Guidelines Year 1 - 8

TKI | TE KETE IPURANGI| Why teach Māori History



Ten Trends feedback

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Please email marketing@core-ed.ac.nz.*

Thank you.

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