

***The Skills Needed for the 21<sup>st</sup> Century  
and can Maori access them in today's  
schooling system***

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## **Introduction**

Rau rangatira ma, e hoa ma, kua hui mai nei i tenei ra, tena koutou, tena koutou, tena koutou katoa. Ka nui nga mihi ki a koutou katoa.

It is an honour to be asked to speak at your Summit.

I have been asked to present my thoughts on the skills needed for the 21<sup>st</sup> century and can Maori access them in today's schooling system.

To answer these questions I want to briefly place schooling into an historical context so we can better understand the challenges we face if we are intent on moving schooling into the 21<sup>st</sup> Century. As I do so you might like to reflect on how this history still influences present-day beliefs, and practice.

Firstly, we need to recognise universal schooling is a relatively new invention. Mass primary schooling was introduced following the passing of the 1877 Education Act, 130 years ago. Universal secondary schooling was not introduced in New Zealand until 1937, 70 years ago.

Secondly, there is nothing natural or given about the ways schools are organised, including for learning. The rules were not designed by Three Wise Men, or etched in stone brought down from Mount Sinai. Schools are the historical product of particular groups with particular interests and values at particular times. They are, in other words, political in origin.

Schooling was designed to meet the needs of industrial society, the age of mass production and the "Taylorist" workplace. Selection was its over-riding objective; its purpose to progressively sift out the 15% or 20% who would become the professionals, administrators and managers – the decision makers of the industrial age.

Early theories on intelligence and the advent of psychometrics provided both the justification and the mechanism for these selective processes. Intelligence was seen as innate and fixed at birth.

Psychometrics emerged from the assumption that if intelligence was fixed, then it could be measured, and measured precisely. By such means, you could be classified as a competent scholar if you got 51%, and a learning failure if you got 49%.

Those children who did not learn in the expected way, according to the rules, were assumed to have some kind of learning defect, or the blame could be fairly and squarely placed on factors outside the school. The consequences of such practices and the beliefs that underpinned them have been considerable for generations of young people, and for New Zealand. We are still paying the price for under-rating the contribution a large percentage of our people could make to society.

Schooling was also strongly focussed on preparing children for working in that society. Schools mirrored the system of mass production. Schools, in design and process, were modelled on the factory.....

“In modern industrial society, conformity to the time of the train, to the starting of work in the manufactory, and to other characteristics of the city requires absolute precision and regularity.... The student must have his lessons ready at the appointed time, must rise at the tap of a bell, move to the line, return; in short go through all the evolutions with equal precision.” **1**

Thus, while the overt curriculum was reading, writing and arithmetic and a limited range of other subjects, the covert curriculum was discipline, punctuality and repetition. These were the six “skills” for the industrial age.

As knowledge ‘exploded’ the curriculum reflected the breaking of ‘wholes’ into an increasing array of ‘subjects’, so as to better understand the parts:

“Relentlessly..... turning flowers into petals, history into events, without ever restoring continuity.” **2**

The result in schools was well described by Postman and Weingartner in 1969:

“English is not history and history is not science and science is not art and art is not music, and art and music are minor subjects and English, history and science major subjects, and a subject is something you ‘take’, and when you have taken it you have ‘had’ it, you are immune and need not take it again.” **3**

The industrial age, in other words, had a dramatic impact not only on how schooling was designed but also on how we viewed schooling. Schooling became like one of the most influential metaphors of the 20<sup>th</sup> Century – the machine.

“Well-oiled, efficient and measurable, the ideal machine had a clear purpose or function which it carried out perfectly. Everything could in principle be conceived as a closed system, consisting of cogs and wheels, instructions and commands, with a boss or government at the top, pulling the requisite levers and engineering the desired effects.” **4**

### **The World of Today**

In the year 2008 I think we can all accept that we live in a dramatically different world. As we embark into the 21<sup>st</sup> Century we also have a much better understanding of how things work, or how they don’t work, to a prescribed set of ‘rules’. Society, the workplace, students, are all different. So are the problems. The answers, or the ‘rules’ need to be different.

I want to share with you some personal experiences which in recent months have underlined for me the rapidity of change and the increasing complexity and “connectedness” of today’s world.

In November of last year I attended Summit 2020, a gathering of primary industry leaders and international experts. It was not, as I anticipated, about growing bigger trees or fatter stock. The recurrent themes were:

- The global economy
- Shifts in wealth distribution
- Demographic changes
- Niche markets and value-added products

- The power of “transnational” corporates
- Chronic diseases and health issues e.g. obesity, osteoporosis, diabetes
- Changing society values
- New technology, especially bio-technologies
- Environmental sustainability
- Climate change

Many of these are interconnected. They are also globally interconnected. They impact on us every day. Let me give you two examples:

1. The collapse of the sub-prime mortgage market in the US reverberated in sharemarkets around the world, impacted negatively on KiwiSavers, and forced up mortgage interest rates in New Zealand.
2. The transfer of land previously used for grazing, and for producing feed stock, to growing of corn for bio-fuel production has contributed to the high world prices for dairy products and, as a consequence, the almost doubling of prices for these products in New Zealand supermarkets.

As Bill Ryan of Victoria University comments: “Industrial societies have long been regarded as complex, but now the complexity seems to have reached extraordinary proportions. Something happening here connects with other things happening there and everywhere else and it all seems to happen simultaneously.” 5

In December my wife and I went to see the film ‘Deepwater’, a film about the first non-stop, single-handed, around-the-globe yacht race.

The yachts were small, and made of wood, there were none of the material technologies of fibre-glass, carbon fibre etc. that now allow the building of much bigger boats that can be handled by one person. The only communication system was the radio powered by batteries which meant it was often unreliable. Navigation was by traditional means; there were none of the Sat-Nav systems taken for granted today. Journalists reporting on the race used manual typewriters to write their stories. The winner took 310 days. With today’s technologies yachts can do it in 80.

This yacht race took place in 1967, only 40 years ago. In 1967 I was in my fifth year of teaching.

These experiences prompted me one morning to jot down the significant changes in the world, including in thinking about the world and our place in it, since I wrote my book “*Our Secondary Schools Don’t Work Anymore*”. **6** It took me only a few minutes to produce a lengthy list. My book was published less than ten years ago.

Through these experiences the question that kept coming into my mind was: “*What is education’s response to this increasingly complex and rapidly changing world?*”

### **Education for the 21<sup>st</sup> Century**

We live in a world of unprecedented change. The future is full of unpredictability and uncertainty. The 21<sup>st</sup> Century, like Starship Enterprise of Star Trek fame, goes where no one has gone before.

It is a world in which a nation’s wealth [in the broadest terms] will depend on the capacity of its people to learn. It is a world of major problems, systemic in nature, that cannot be solved through one discipline. It is a world in which many of its problems raise ethical and moral issues. It is a world in which we need to think differently, and to do things differently, and a world that requires new ways of knowing and new ways of learning.

There is one certainty in this world of uncertainty. In 15-30 years time our young people will be in charge. Our role as educators is to prepare them for their futures, not our present. We need to ensure they have the understandings and abilities to face the challenges of their future, and to make a productive contribution to society.

As Mason Durie and the other guardians of the Secondary Futures Project state:

“The message is clear: in 20 years time, a key purpose of schooling is to equip students with the full range of capabilities they need to participate successfully in society, and social capabilities are central to this vision.” **7**

With respect, I would suggest we need to replace “in 20 years time” with **now**.

So what are these understandings and abilities? Numerous writings from individuals and reports from Governments and commissions from around the world show a high degree of agreement although the precise words might vary.

Out of these I have chosen three, because together they describe the understandings, competencies, and aptitudes we need to develop in our young people if they are to successfully face the challenges of their futures.

## **1. The New Basics Project [Queensland]**

One of the prime focuses of this project is to provide opportunities for students to understand themselves and others, and the world in which they live, and will live, their lives.

The Curriculum, therefore, is based on four questions:

- Who am I and where am I going?  
[Life pathways and social futures]
- How do I make sense of and communicate with the world?  
[Multiliteracies and communications media]
- What are my rights and responsibilities in communities, cultures and economies?  
[Active citizenship]
- How do I describe, analyse and shape the world around me?  
[Environments and technologies]

## **2. The 6 Cs**

As Bentham Ohia and others know at TWoA I like C words, and will not be surprised therefore that I had some hand in developing these with the NZ Employers Federation in the 1990s.

The first two **Communication** in all its forms, and **Computation** are what can be described as the “old basics” but of even greater importance in today’s world.

The other four are the “new basics” which reflect the need for a range of other competencies.

**Co-operation** – the ability to work productively with others;

**Computer Literacy** - the ability to utilise effectively new information and communication technologies;

**Creativity** - the ability to think outside the square, to take risks, to make connections between ideas; and

**Critical Thinking** – the ability to self-reflect, and to make judgements or solve problems based on analysis, interpretation, evaluation and synthesis.

I want to add one more ‘C’ word, one that I have already used several times. That word is “Connectedness”, which is about understanding the nature of wholes, and how parts and wholes are inter-related.

In their book “*Presence – Human Purpose and the Field of the Future*” [2008] Senge et al argue that ‘connectivity’ is the key to coping successfully with the world of the future.

“All learning integrates thinking and doing. All learning is about how we interact in the world and the types of capacities that develop from our interactions. What differs is the depth of the awareness and the consequent source of action. If awareness never reaches beyond superficial events and current circumstances, actions will be reactions. If, on the other hand, we penetrate more deeply to see the larger wholes that generate “what is” and our own connection to this wholeness, the source and effectiveness of our activities can change dramatically.”

The concept of connectivity also applies to the need to integrate or unify knowledge, to move away from the fragmentation of knowledge “that consists of false division, making a division where there is tight connection and of seeing separateness where there is wholeness.”

The Oxygen Group, a group of New Zealand scientists established to look at the role of science in the 21<sup>st</sup> Century, has developed a Statement of Principles.

Its introduction says:

“The rate and scale of human change is unprecedented and sustainable human existence requires a transformation of how we think and act. Our vision is for New Zealand to be a scientifically informed and prosperous society that leads the world in weaving sustainable relationships between the natural environment and people, at both community and individual level.”

The principles include the need for all of us to “see beyond our human limitations in space and time and to understand our place in the Universe and living world.”

The third side of connectivity is recognising, as does Stephen Covey in *“The 8<sup>th</sup> Habit”*, that human beings are four-dimensional – body, mind, heart and spirit and these correspond to four capacities or intelligences: our physical, mental, emotional and spiritual intelligences. Drawing on all of these is essential to seeing and doing things differently and to realising the talents, ingenuity and creativity that lie in everyone.

This thinking is reflected in ASCD’s Whole Child Campaign, which calls for schools to encourage the development of all aspects of whole persons: their intellectual, moral, social, aesthetic, emotional, physical and spiritual capacities.

### **3. UNESCO Key Competencies**

I have chosen this as my third example because I believe it pulls together all that I have presented so far. UNESCO offers a new framework of four competencies:

- Learning to Know
- Learning to Do
- Learning to Be
- Learning to Live Together

Under this new framework, the concept of **learning to know** is moving away from an exclusive emphasis on passive content acquisition to one of engaged knowing for understanding, discovery, and exploration. Learning to learn and integrating multiple disciplinary ways of knowing and modes of inquiry are

now viewed as essential to learning to know. We are moving away from only learning what to know to also learning how to know.

The concept of **learning to do** is also being deepened. No longer viewed exclusively as developing prerequisite skills [usually physical] for a specific vocation, learning to do now emphasises the development of a broader range of intellectual competencies that are adaptive and transferable to multiple vocational and avocational endeavours. Creative problem solving, conflict resolution, and interpersonal communication are now viewed as essential to learning to do.

**Learning to be and learning to live together** are emerging as indispensable knowledge paths for a vibrant and just economy, a healthy planet, and a sustainable world. **Learning to be** is fundamentally rooted in autonomy and the freedom to be and become one's self [identity]. It recognises the imperative to holistically develop the fullness of our potentials. It affirms the need to invite emotions, imagination, creativity, and spirit into our learning and our work. It recognises and honours the innate dignity and right of every person to develop all of who they are.

**Learning to live together** is fundamentally rooted in respect for cultural differences and diversity, in choosing dialogue and collaboration over competition, in choosing non-violence and peace over violence and conflict, and in creating shared identity and meaning. Recognising interdependence and creating collective purpose fosters a new context for respect, empathy, reciprocity, community, and stewardship; enables us to discover and enrol the gifts of others; and permits us to deeply understand the common in the common good.

### **Accessing these capacities**

That brings me to the last question: Can Maori access these capacities?

From what I have said so far it seems pretty clear that Maori have a head-start. It is encouraging to note that Maori worldviews and those of other indigenous peoples are increasingly part of mainstream thinking. The accumulated wisdom of many centuries on learning and knowing was swept aside with the advent of mass

schooling. It has taken another century to recognise the inherent value of that wisdom.

But the other side to this question is: Can Maori access [and develop] these capacities within our current models of thinking and doing? My answer to that, to put it bluntly, can be answered in one word: NO.

To explain that let me return to that metaphor of the machine.

Systems that cannot respond to radical changes in the environment will always fail in the end. In the short-term there are productivity gains from working the machine harder, reprogramming from the top, tightening specifications and quality standards, and setting ambitious targets. But in the end, if the only response to a new environment is to run the machine harder, the result is that its components break down faster.

Around the world organisations are realising that these traditional responses to changes in the environment, namely

- a) Increase resources [i.e. throw more money at it to solve the problem] or
- b) work smarter [i.e. seek to get better results using the same models or frameworks]

simply don't work anymore. In today's world the response has to be different; it has to be about doing "better things", rather than doing things better. That means being creative and innovative, about thinking differently and doing things differently.

Yet in education the higher we go in the system the more firmly we are stuck in an historical paradigm about what schools are and should be - of subjects with no connections between them; of filling heads with "knowledge" that might be needed one day, but what we know is not remembered; of rigid and inflexible timetables; of age cohorts and locking children in same size groups into classroom boxes; of an obsession with trying to measure learning [and thereby the loss of balance in valuing what can be measured and what cannot]; of rules that too often still emphasise obedience rather than responsibility; and with one particular set of world views dominating almost every part of the system.

It is what I call the Paradigm of One – one teacher, teaching one subject to one class, of one age, in one classroom, for one hour ..... and so on.

In education we continue to tinker with the machine, with initiatives that lack connectedness, are too often focussed on providing more of the same and too often reactions to perceived failings of the parts, rather than a failing of the whole. We still seem to be operating on the belief that tinkering long enough will turn a 1928 Model T Ford into a 2008 Ford Mondeo.

I am often reminded of two statements, attributed to Einstein:

*The height of insanity is doing the same things over and over again with the same results.*

*We cannot solve the problems of today at the same levels of thinking we were at when we created them.*

Around the world there is increasing recognition that our current model of schooling is not only time-worn, it is obsolete. Many countries are actively encouraging and supporting the creation and implementation of new models of schooling. In New Zealand while there is some encouragement and support, it is insufficient and at the margins. I facilitate a voluntary group of secondary school principals – the Coalition of 21<sup>st</sup> Century Schools. If given the opportunity, every one of them would design a school markedly different from the current model. These principals are thinking differently and doing things differently, and beginning to make a difference. But they can't break the paradigm without considerably more support than they are currently receiving.

There are those who would argue that we are breaking down this paradigm. They would point to the new Curriculum, Schools Plus, Ka Hikitia and a range of other initiatives. My counter-argument would be that I have in my office at home reports that raise the same issues, including under-achievement of Maori, that are now 35 years old. I do not believe any of us are comfortable about the idea of waiting another 35 years.

When we begin to think of the 'whole' rather than parts'; when we think in terms of 'connectedness', rather than 'separateness', then

the inevitable conclusion in my view is that if we are to achieve what these new initiatives intend there should be one initiative – to create 21<sup>st</sup> century schools.

Between 2000 and 2003 I was fortunate to be a member of a project team at Te Wananga o Aotearoa that designed a 21<sup>st</sup> Century School. The application to establish that school was turned down by the Government in 2003. We know how; we just seem to lack the **courage** – my last ‘C’ word but one which is critically important if we are to achieve the vision I believe we all share.

After 45 years however, I still retain a level of optimism, because I believe thinking is changing and we are in opportune times to do things differently. In the words of Victor Hugo:

*“There is nothing more powerful than an idea whose time has come.”*

The challenge for this Summit is to take the opportunity to not just take hold of an idea, but to have the courage and foresight to see it through to reality.

And that brings me to my last quotation, which I will leave you to consider during the rest of this Summit:

*“There is no doubt that a small group of committed citizens can change the world. Indeed it’s the only thing that ever has.”*

*[Margaret Read]*

No reira, tena koutou, tena koutou, tena katoa

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