

A Systemic Lens on Classroom Teaching: Supporting the Key Competencies of the New Zealand Curriculum in Secondary Schools

Prepared by
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Whāia te mātauranga hei oranga mō koutou
Seek after learning for the sake of your wellbeing

– Māori whakatauki (proverb)

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The desire to learn from communities and cultures different from my own stems from my mother and father, who encouraged my brothers and me to look beyond ourselves and engage with new perspectives. I am indebted to them for bringing world travellers to our home and encouraging me to build a career of service through education.

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Michael Wolking
Wellington, August 2018

EXECUTIVE SUMMARY

The New Zealand Curriculum outlines “capabilities for lifelong learning” captured in five key competencies:¹

- **Thinking** – “...using creative, critical, and metacognitive processes to make sense of information, experiences, and ideas”
- **Using language, symbols, and texts** – “...working with and making meaning of the codes in which knowledge is expressed”
- **Managing self** – “Students who manage themselves are enterprising, resourceful, reliable, and resilient. They establish personal goals, make plans, manage projects, and set high standards”
- **Relating to others** – “...interacting effectively with a diverse range of people in a variety of contexts”
- **Participating and contributing** – “...being actively involved in communities. Communities include family, whānau, and school and those based, for example, on a common interest or culture”

Nationally, evidence suggests that the key competencies have been slow to gain traction across secondary schools. For example, the 2015 National Survey of secondary school teachers concluded: “There has been little change since 2012 in how teachers are incorporating the key competencies in students’ learning experiences, how they viewed the importance of metatalk opportunities and how often they provided these for their classes.”² And a 2017 survey of more than 4,000 primary and secondary teachers found the following across the sample:³

Not surprisingly, it is the practices related to the less familiar... aspects of The New Zealand Curriculum that were new, future-focused, and have not been systematically supported that fewer teachers saw themselves carrying out well or very well. These include ensuring students direct their own learning pace, content, and goals; think critically and talk about what and how they are learning; [use] student feedback to work out what is most important to focus on and the best strategies to use, and [analyse] the impact of their teaching on each student’s learning.

This paper offers insights on why these “new” practices of the New Zealand Curriculum have been slow to take root in secondary schools, giving recommendations for how they might be supported going forward. In essence, the story of the key competencies is the story of schools trying to implement a new set of instructional practices. In 2012, professors Michael Fullan and Andy Hargreaves outlined their perspective on what is needed for that type of work:⁴

People can only teach like pros when they want and know how to do so – when they have the right knowledge and background, the colleagues around them who will keep them performing at their peak, and the time and experience that underpin the ability to make wise judgements and decisions that are at the heart of all professionals’ actions.

With regard to changes in practice then, teachers need to value the change, know how to implement it, and have time to reflect on new strategies with colleagues. To this list, I would add a fourth dimension – the system in which teachers work should not wash out any of these efforts, nor incentivise practices that run counter to them. That is, the system needs to offer a coherent set of guidelines and incentives for desired practices.

I argue that four elements must be in place in order to for pedagogical change to take root across the system:

- **Values** – Stakeholders must value the change
- **Knowledge** – Stakeholders must deeply understand how the change impacts practice
- **Capacity** – The system must have the capacity to support the learning process of those implementing the change
- **Coherence** – The various roles and policies within the system must be designed to support the change, meaning critical structures and policies should not work against proposed changes

¹ *The New Zealand Curriculum* (2007)

² Wylie, C., and Bonne, L. (2015)

³ Wylie et al (2017)

⁴ Fullan, M. and Hargreaves, A. (2012). p. 5-6

I present findings in these four areas relative to the key competencies using a mix of data from school visits, national surveys, and academic research from both New Zealand and abroad. With respect to the instructional change framework above, those findings suggest the following:

- Values – teachers generally indicate that they value practices associated with the key competencies, but actions do not indicate that those practices are implemented at scale
- Knowledge – a range of stakeholders would benefit from a deeper understanding of exactly how the key competencies underpin learning
- Capacity – organisational capacity to drive instructional change at the school level and across the system is currently limited
- Coherence – multiple organisations control policies and tools that impact the implementation of the key competencies, and these policies do not necessarily work in tandem with one another

To address challenges and opportunities discussed in findings, I offer a detailed set of recommendations. These recommendations are designed to deepen the value placed on key competencies across the system; increase the knowledgebase of how those competencies support high quality learning and long-term success; allow for schools to support the organisational learning needed to foster instructional change; and align critical organisations on policies that currently dictate practice.

I err on the side of specificity in recommendations in order to move beyond general agreement that some aspects of schooling need to change to concrete examples of what might actually drive those changes.

Specific recommendations include:

- 1) **Values** – Overall, signal that the education system values the development of key competencies alongside academic success
 - a) Expand data analysis that can offer insight into the key competencies by encouraging schools to utilize surveys to capture a broad set of outcomes; analyse existing data within the system to understand the holistic impact schools have on learners; and review existing school reporting structures and practices to understand how schools conceptualize success
 - b) Utilize digital technologies to improve the frequency and variety of information flows with parents
- 2) **Knowledge** – Help stakeholders within the system build deep knowledge of how the key competencies impact learning
 - a) Offer micro-credentials for teachers that tie social and emotional learning to development of the key competencies
 - b) Ensure professional learning on key competencies is provided within disciplines as much as it is provided across disciplines
 - c) Pilot project-based learning credits and evaluate the impact of project experiences before a decision is made about whether to require these credits across the system
 - d) Target social and emotional learning programming options for students at ages 13-15, and tie the lessons of these efforts to the key competencies in order to ensure they support all students
- 3) **Capacity** – Ensure that leaders within schools have the time and training to support instructional change
 - a) Ensure teacher collaboration time is maximised within current timetables, and that collaboration supports concrete strategies grounded in sound inquiry processes
 - b) Invest in middle leader training through Ministry regional offices or service providers
 - c) Use digital technologies strategically to support differentiation and feedback for students
 - d) Field test instructional resources that support development of the key competencies
 - e) Develop a New Zealand research base on the impact of structures that prioritize teacher-student relationships
- 4) **Coherence** – Ensure that the mix of agencies and policies that impact schools' priorities work in tandem to support the key competencies
 - a) Streamline professional standards so that appraisal processes involve reflection on the implementation of the New Zealand Curriculum

- b) Broaden the Record of Achievement from a list of credits to a portfolio of learning experiences and achievements
- c) Provide a database or toolkit that allows school leaders and teachers to prioritize standards that support development of the key competencies
- d) Ensure evaluation of internal processes drives review cycles to prevent an overreliance on NCEA achievement levels
- e) Incentivise employers, community organisations, and/or universities to collaborate with secondary schools at scale
- f) Work with universities to ensure required credits contribute to a secondary school experience consistent with the New Zealand Curriculum’s overall vision and principles

In the conclusion of this paper, I attempt to prioritize the recommendations by relative importance and ease of implementation, providing a possible roadmap for both short and long-term implementation (Figure 1).

Figure 1: Recommendations by importance, complexity, and lead actor

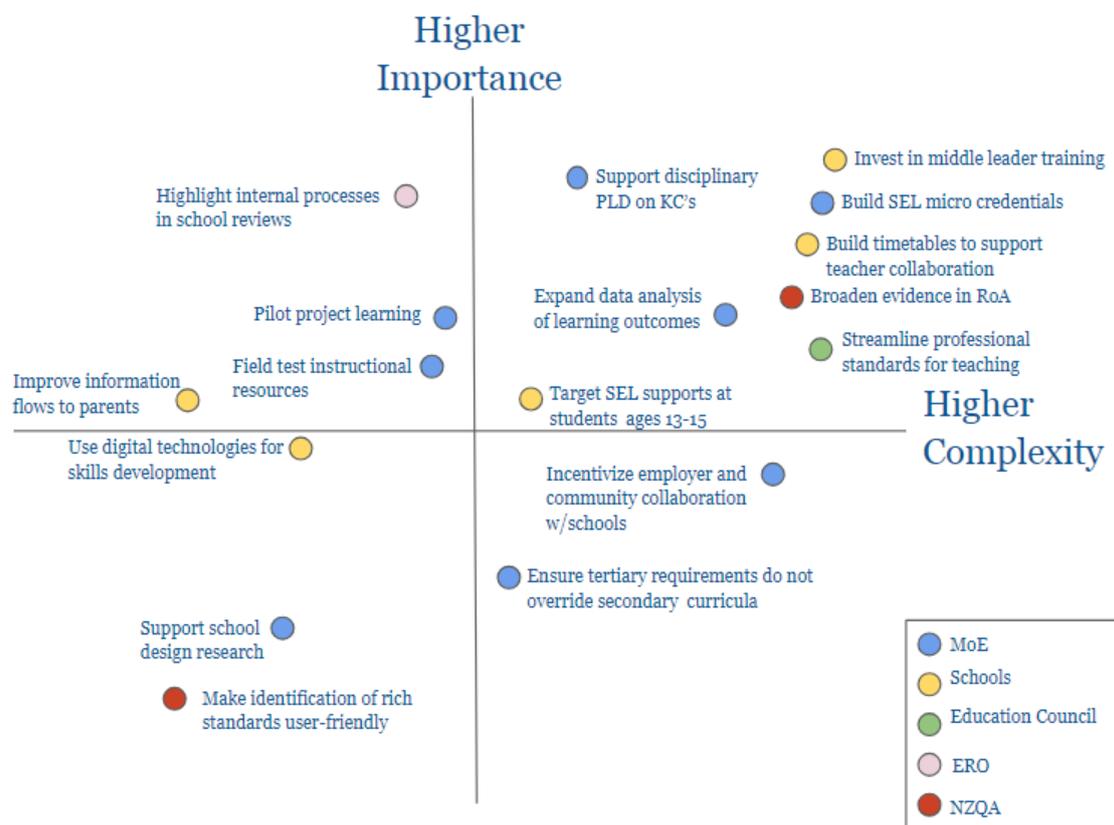


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PREFACE

Education's increasing focus on capabilities

More than ever, national education systems are under intense pressure to prepare students for a rapidly changing future. As economic, environmental, and social systems become increasingly complex and interdependent, schools find themselves engaged in deep questions of what it means to develop thoughtful students well-prepared to live impactful, meaningful lives.

In the 1990s and 2000's, anticipating the complexity of future demands on their graduates, many countries began to redevelop curricular frameworks, and New Zealand was no exception. The highly regarded New Zealand Curriculum (NZC), updated in 2007, has received international praise and widespread domestic support for developing a clear set of values, principles, competencies, and learning outcomes that provide an anchoring learning framework for roughly 2,500 schools.

Not long after the revamped New Zealand Curriculum, the New Zealand government undertook extensive broadband investments. By the start of the 2017 school year, Network for Learning (N4L) had equipped 99 per cent of schools with broadband access. Across the country, New Zealand schools take advantage of technology in the classroom through investments in hardware as well as Bring Your Own Device (BYOD) policies.

Equipped with a world-class curricular framework and digital tools to take advantage of the explosion of knowledge and networks found in online environments, New Zealand schools have the means to make significant instructional shifts. Indeed, some have – New Zealand is home to many schools pushing the boundaries of traditional school organisation, pedagogy, and learning opportunities available to students at secondary school level (aged 13 to 17).

However, visits conducted to 21 schools (17 secondary) and analysis of several national surveys of teacher practice suggest that a gap remains between teacher practice and the vision for teaching and learning outlined in the NZC, specifically as it relates to developing a set of “capabilities for living and lifelong learning.”⁵ I seek to understand why that is the case and make suggestions for actions that could be taken to address challenges.

A note on the terminology of “social and emotional” skills

Much of the discourse on developing critical skills for students both within New Zealand and the OECD has focused on the future – future jobs, future skills, and what students need to be able to do to be prepared for the future. But what to actually call many of these skills is a matter of some debate.^{6 7} In this paper I generally use the terms “social and emotional skills” or “social and emotional learning” (SEL).

Social and emotional skills go by a number of different names both in the research literature as well as in the field, including “non-cognitive skills”, “soft skills”, “character skills”, and “21st century skills.”⁸ They include things like conscientiousness, perseverance, sociability, and curiosity.⁹ Students need them to do things like set goals, process information, build relationships, and manage interactions with others.¹⁰

In order to stay consistent with past research, many literature reviews from both academic and international organisations in the past 10 years have used the term “non-cognitive skills” in estimations of the impact of social and emotional elements in learning.^{11 12 13} Much of the academic literature refers to these skills as “non-cognitive” in part because they are not directly measured on tests of “cognitive” ability (such as achievement tests of literacy and numeracy knowledge).¹⁴

But all “non-cognitive” skills require some level of engagement with cognitive processes. And the term “social and emotional” seems to be gaining traction among practitioners and policymakers, particularly

⁵ New Zealand Curriculum (2007)

⁶ Kamentz (2017)

⁷ Jones, M. and Kahn, J. (2017), p.5

⁸ Kautz, T., Heckman, J. and others (2014)

⁹ Heckman, J. and Kautz, T. (2014)

¹⁰ Jones, M. and Kahn, J. (2017)

¹¹ Farrington, C. and others (2012)

¹² Zhou, K. (2016).

¹³ Gutman, L. and Schoon, I. (2013)

¹⁴ Heckman, J. and Kautz, T. (2014)

within the OECD. For these reasons, I deliberately use the terms “social and emotional skills” or SEL to refer to the skills classified in research circles as “non-cognitive”. The OECD defines these social and emotional skills as “abilities to regulate one’s thoughts, emotions, and behaviour.”¹⁵

Many of these skills are found directly in the key competencies. “Using language, symbols, and texts” requires literacy and numeracy skills and knowledge. “Thinking” requires metacognition, the ability to direct cognitive processes. “Managing Self” references motivation, perceptions of capability, and resilience. “Relating to Others” references openness to new learning and interacting effectively with others. “Participating and Contributing” is bolstered by the extraversion and empathy of individuals. Each are important to navigating a successful life in uncertain futures, and each also have broad research bases in academic disciplines.

The National Curriculum: the New Zealand Curriculum and *Te Marautanga o Aotearoa*

Schools in New Zealand follow a national guiding document dependent on the language of instruction and character of a school. Māori-medium schools follow *Te Marautanga o Aotearoa* and teach at least 51 per cent of their courses in te reo Māori. English-medium schools can offer te reo Māori but generally follow the English-medium New Zealand Curriculum.

This report focuses on the implementation of the key competencies of the English-medium New Zealand Curriculum; the key competencies of the New Zealand Curriculum are not explicitly present in *Te Marautanga o Aotearoa*, though some concepts may overlap across frameworks. For more detail on the dual aspect of the National Curriculum in New Zealand, see Appendix 1.

Understanding the “front” and “back” of the New Zealand Curriculum

Of additional note on terminology is the “front” and “back” of the New Zealand Curriculum. Colloquially, the key competencies reside in the “front end” of the New Zealand Curriculum – that is, the portion of the curriculum that outlines the vision, principles and values that serve as the framework for education in New Zealand schools. This portion of the curriculum stands in contrast to the “back end” of the NZC, which specifies eight Learning Areas, each comprised of achievement objectives across eight levels.

It is worthwhile to understand the tactile experience of the New Zealand Curriculum in its printed form because that experience informs the discourse on pedagogy among teachers. A common criticism of “narrowing the curriculum” can be said to stem from an approach that stems principally from a review consisting solely of achievement objectives: that is, a teacher would flip to the back of the curriculum, determine what needs to be taught in a content area, and proceed to design a series of lessons in which discrete content knowledge is provided to students. In such a case, the “front end” of the curriculum might be ignored. The 2007 update of the New Zealand Curriculum added the “front end”, including the key competencies, and several principals interviewed for this report remarked that an initial wave of professional learning investment in the key competencies was made in the years following the update.

Understanding the New Zealand education system: Appendix 1

Readers unfamiliar with the primary agencies and current issues in the New Zealand education system may wish to begin by reading Appendix 1. This section outlines the role of the Ministry of Education alongside other important actors in the sector as well as giving a sense of the primary responsibilities of boards of trustees, principals, and teachers.

¹⁵ OECD (2015), p. 4

METHODOLOGY

Early in the project, I reviewed survey data of teaching practices collected by the New Zealand Council for Educational Research (NZCER) in order to determine practices that teachers felt most comfortable with and least comfortable with. Data indicated that many practices associated with the development of some of the New Zealand Curriculum's key competencies as well as general social-emotional skills, such as setting goals, lagged behind more traditional teaching methods, particularly at the secondary level.

Surveys and reports that provided the most recent and complete picture of teaching practices included:

- “Teaching Practices, School Practices, and Principal Leadership: The first national picture 2017”. Data from 4,355 teachers and 353 principals at 335 schools.¹⁶
- “Secondary Schools in 2015”, NZCER, published 2016. Part of the NZCER National Surveys project, which surveys teachers and principals every 3 years.¹⁷
- “Secondary Schools in 2012,” NZCER, published 2013. Part of the NZCER National Surveys project, which surveys teachers and principals every 3 years.¹⁸
- “Learning to Learn in Secondary Classrooms”, published 2015. Draws on data from the “Secondary Schools in 2012” report.¹⁹

To determine the overall value of emphasising key competencies in the Curriculum, I conducted a rapid review of policy and academic papers that summarise research on social and emotional learning, specifically looking for those conducted as a meta-analysis or containing findings from meta-analyses. Search terms included “non-cognitive skills”, “social-emotional skills”, “soft skills”, and “twenty-first century skills”, all of which can be used interchangeably by practitioners. I specifically chose to review meta-analyses due to their ability to summarise critical findings in an area of study. A potential limitation of relying on meta-analyses, however, is publication bias – the tendency for studies with positive effects to be submitted and accepted for publication, while work with little effect or negative impacts may not make it into journals.²⁰

To test what I had found through survey and literature reviews, I conducted a wide range of interviews leading to the collection of qualitative data. I interviewed representatives from the Ministry of Education (MoE), New Zealand Qualifications Authority (NZQA), Education Review Office (ERO), Victoria University of Wellington, service providers, industry training organisations, and others to gather perspective on the design of the New Zealand education system and its efforts to develop capabilities for lifelong learning.

In addition, I visited 20 schools and one activity centre (which I will group together and refer to as 21 “schools” for simplicity”) in order to gather a wide range of perspectives on the New Zealand Curriculum and technology usage among principals, teachers and students who engage with both directly (Figure 2). I sought to create a sample of schools that would be diverse in socioeconomic status, region, ethnicity of students served, pedagogical approach, level of technology implementation, and building type (traditional buildings vs. the open plan concepts of newer “modern learning environments”).

To select schools, in some cases I independently identified schools and coordinated visits directly with school principals. In other cases I relied on “snowball sampling” methods – using recommendations from MoE officials, regional staff, or teachers and principals to identify schools to visit. While such a method creates sampling bias, it does allow for efficient connection with interviewees, an aspect of great importance in the compressed timeline of a three to four-month window to conduct interviews.

The final sample of 21 selected schools had a median decile level of five, compared with a median decile level of six nationally, and skewed slightly toward lower decile schools.²¹ New Zealand educates a diverse set of learners from a variety of ethnic backgrounds, and the sample visited presented a nearly identical match to national statistics on ethnicity (Figure 3). Geographically I concentrated visits around a number of urban areas but attempted to gather a broad range of perspectives from different regions in the country (Figure 4).

¹⁶ Hipkins, R. (2015)

¹⁷ Wylie, C. and Bonne, L. (2015)

¹⁸ Wylie, C. (2012)

¹⁹ Hipkins, R. (2015)

²⁰ Thornton, A. and Lee, P. (2000)

²¹ ‘New Zealand Schools’ (2018), Ministry of Education

Figure 2: Decile level of 21 schools visited, March – June 2018

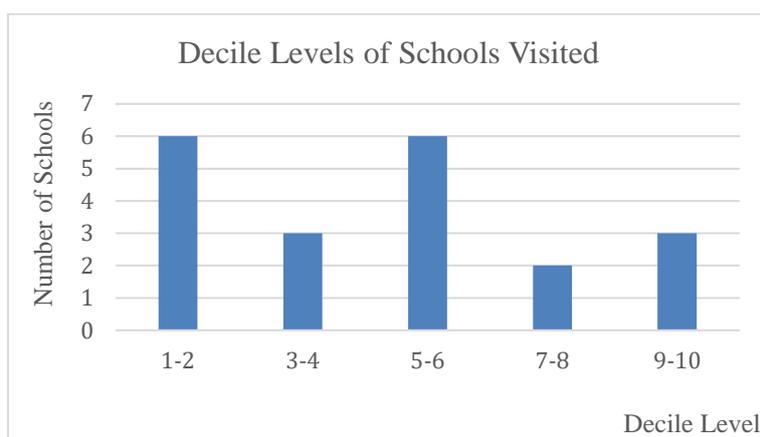
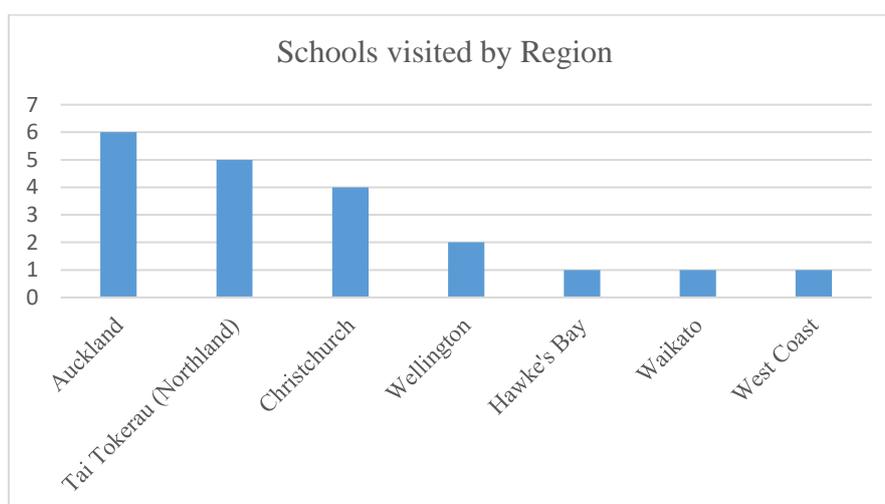


Figure 3: Comparison of ethnicity between schools visited and national figures²²

	Schools Visited (13,841 students)	National Population (815,816 students)
European/ Pakeha	49.38 per cent	50.30 per cent
Māori	23.57 per cent	23.90 per cent
Pasifika	10.26 per cent	9.80 per cent
Asian	12.02 per cent	11.80 per cent
MELAA	2.50 per cent	2.70 per cent
Other, International	2.28 per cent	1.50 per cent
Total	100.00 per cent	100.00 per cent

Figure 4: Schools visited by region



²² Education Review Office (2018)

Before reaching out to schools, I undertook the following process to ensure that a particular school would help contribute to a diverse sample:

- Review of school demographic data, including location (urban or rural, etc.), decile (high or low socioeconomic status), and ethnicity (percentage of students of Māori, Pacific, Asian, Middle Eastern/Latin American/African (MELAA), or European descent)
- Review of latest ERO reports to determine strengths and challenges of school
- Review of school website to understand school's curricular approach, including technology policy as well as individual class websites in order to get a sense of teaching

The structure of school visits varied considerably, but all 21 visits included an interview with either a principal or deputy principal. Additional details on visits include the following:

- 14 visits included a walkthrough to see school grounds, teachers in action, and talk to students
- Three visits included focus groups with students
- One visit included time to sit in on a staff meeting
- One visit included time to sit with a leadership team meeting of deputy principals
- One visit included a "shadow a student" methodology in which I attended all classes with a student for the day, recording her actions and teacher actions to better understand her learning experience

Interviews explored school leaders' perspectives on the inclusion of key competencies in their schools' curricular goals and teaching practices. I developed a core set of questions for each interview, but conversations remained semi-structured to allow for time to explore unique opinions and perspectives of school leaders.

Generally, school leaders discussed how they had experienced the rollout of the New Zealand Curriculum; how they incorporated the key competencies into their school's local curriculum; how deeply the implementation of that curriculum occurs in action; and what factors lead to effective or challenging implementation environments, including the role of technology.

During walkthroughs, I visited school grounds to observe learning spaces available for students, including floor plans and furniture layouts in typical classrooms as well as unique learning spaces such as woodshops or maker spaces. I held informal conversations with students engaged in their work, typically asking "what are you working on?", "why are you working in it?" and "what skills do you need to be successful in this work?"

In student focus groups, I explored what skills students believed they needed to be successful in their classes; how they perceived the usage of technology in their classes; and whether or not they felt they should be assessed on "social and emotional skills" such as the ability to work well with others or make plans effectively.

I. BACKGROUND ON KEY COMPETENCIES

What are the key competencies, and why are they important?

Taking note of the Organization for Economic Cooperation and Development's (OECD) work, broader employment trends and emerging research into learning, the 2007 New Zealand Curriculum arrived at five "capabilities for living and lifelong learning," known collectively to educators as the "key competencies". The NZC states that the key competencies are fundamental to learning in all areas: "they are a focus for learning – and they enable learning."²³ Those five competencies are defined as follows:²⁴

- **Thinking** – "...using creative, critical, and metacognitive processes to make sense of information, experiences, and ideas"
- **Using language, symbols, and texts** – "...working with and making meaning of the codes in which knowledge is expressed"
- **Managing self** – "Students who manage themselves are enterprising, resourceful, reliable, and resilient. They establish personal goals, make plans, manage projects, and set high standards"
- **Relating to others** – "...interacting effectively with a diverse range of people in a variety of contexts"
- **Participating and contributing** – "...being actively involved in communities. Communities include family, whānau, and school and those based, for example, on a common interest or culture"

This section explores the origins of the key competencies and their importance with regard to changing labour trends, updated research on social emotional learning (SEL), and a secondary system improved in its ability to grant credentials even while the quality of those credentials comes under increasing scrutiny.

Origin of the key competencies

The origin of the key competencies lies in future-focused work from the OECD

In the late 1990s the (OECD) was in the midst of creating a framework to guide the development of its Programme for International Student Assessment (PISA). It started down a short question with complex answers: "What demands does today's society place on its citizens?"²⁵

In its background rationale for thinking about a set of skills transferable across countries and cultures, the OECD took a future focus:²⁶

Globalisation and modernisation are creating an increasingly diverse and interconnected world. To make sense of and function well in this world, individuals need for example to master changing technologies and to make sense of large amounts of available information. They also face collective challenges as societies – such as balancing economic growth with environmental sustainability, and prosperity with social equity. In these contexts, the competencies that individuals need to meet their goals have become more complex, requiring more than the mastery of certain narrowly defined skills.

The Definition and Selection of Competencies – the DeSeCo project – published its results in 2005. The four competencies that resulted – acting autonomously, functioning in heterogeneous groups, using tools interactively, and thinking – were chosen as a set of skills that meet the following criteria:²⁷

- every student needs them;
 - they are relevant across cultures and disciplines; and
-

²³ *The New Zealand Curriculum* (2007) p. 38

²⁴ *The New Zealand Curriculum* (2007), p. 12

²⁵ Hipkins, R. (2018), p. 1

²⁶ OECD (2005), p. 4

²⁷ Hipkins, R., Bolstad R., Boyd, S. and McDowall, S. (2014)

- they are interdisciplinary, i.e. relevant to all areas of the curriculum.

New Zealand policymakers watched the DeSeCo project with interest and sought to build on its work in order to overcome a problem with the 1990s New Zealand Curriculum: namely, that essential skills in essential learning areas were unevenly applied and contained a list so broad as to make focusing on a coherent strategy difficult.²⁸

Key competencies, skills, and employer perspectives

Skills found in the key competencies continue to be valued by employers and the jobs marketplace

Employers and policymakers in New Zealand have been quick to embrace the future focus of the key competencies. For example, the Labour Party's 2016 Future of Work report noted:²⁹

Throughout the Future of Work Commission employers have expressed the need for skilled workers who have a grasp on what has been called "soft skills" or "enterprise skills." The key competencies in the New Zealand Curriculum recognise the value of these skills...we need these skills to be fostered throughout the educational experience of students.

Certainly, a number of trends in the economy support the need for preparing students with a well-developed set of transferable skills alongside deep content knowledge. Chief among these may be the ability to learn and adapt throughout a career cycle. In 2002, for example, Massey University professor Paul Spoonley noted that structural changes in the twenty-first century economy would mean employers increasingly forego training programs and instead pass on the costs of training and development to individuals.³⁰ In such an environment, individuals are likely to need to be able to assess their own strengths and weaknesses, understand possible employment options, and plan to pursue them.

On the demand side for work, data from the United States show that labour markets increasingly reward social skills, with employment and wage growth highest in areas that require both cognitive and social skills (Figures 5 and 6). The Chief Science Advisors of several New Zealand Ministries highlighted these findings in a 2018 commentary on digital futures and education.³¹

Thus in many major respects the key competencies have their origins in thinking about the world beyond school, particularly with a focus on the future, and particularly with an eye toward equipping students to develop skills that will be valued in the workplace. As Josh Williams of the Industry Training Federation noted in an interview, employers are often most interested in the skills students develop at school rather than the specific content knowledge they have required:³²

Employers tend to start the conversation [during job interviews] with, 'I see you've got NCEA, now tell me about your skills.'

²⁸ Hipkins, R. (2018), p. 3

²⁹ *The Future of Work* (2016), New Zealand Labour Party, p. 22

³⁰ Spoonley, P. (2002)

³¹ Gluckman, P. and McNaughton S. (2018), p. 2

³² Author interview. 29 March 2018

Figure 5: Demand for social and service tasks has increased since the 1980's relative to routine tasks³³

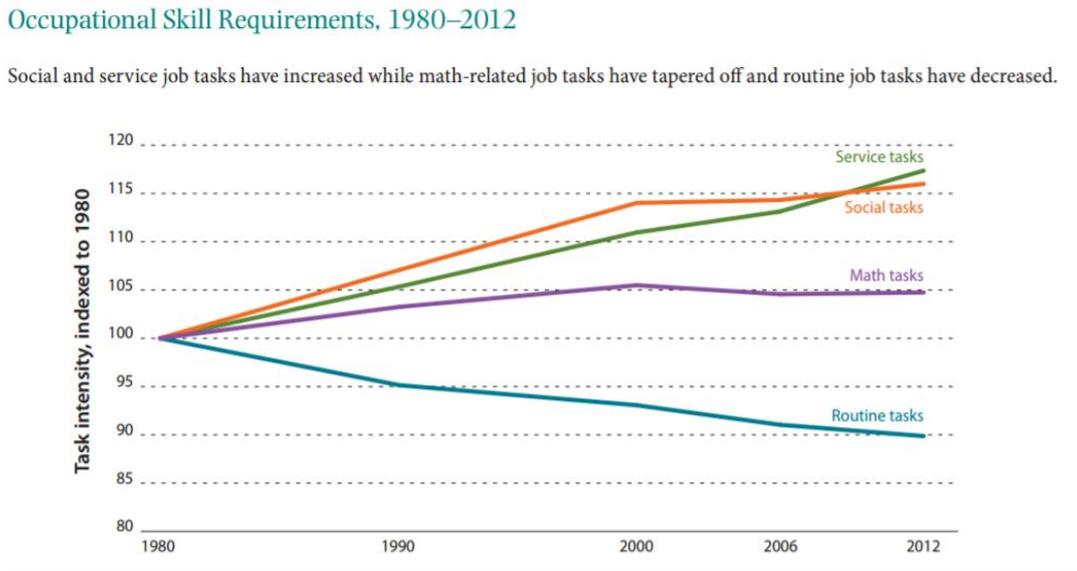
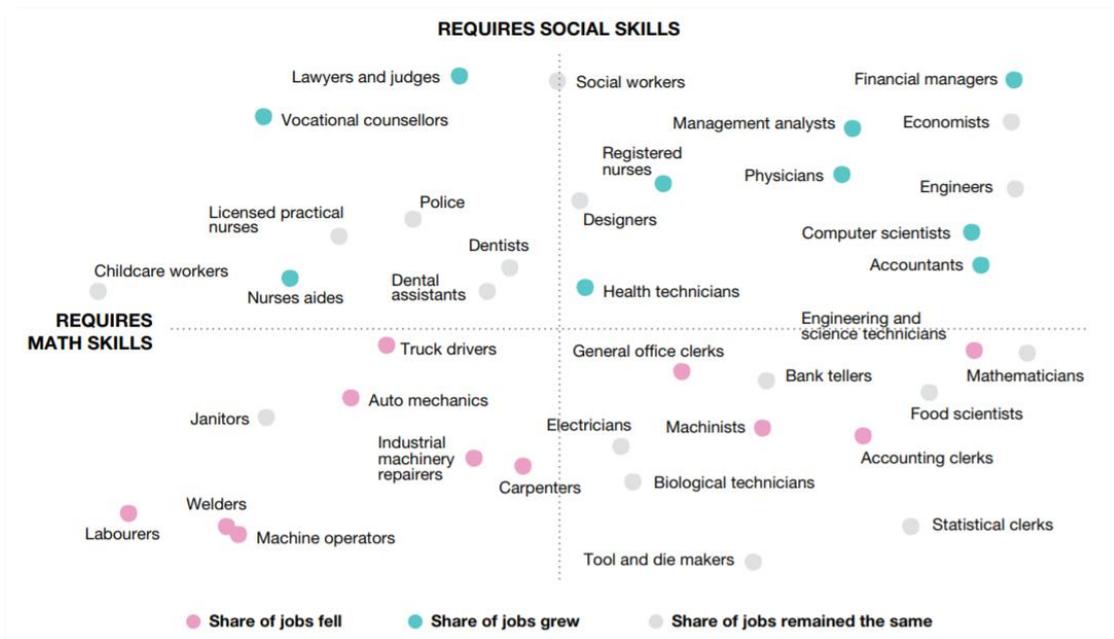


Figure 6: Increase in jobs requiring social skills³⁴



³³ Whitmore Schazenbach, D. Nunn, R. and others (2016)

³⁴ World Economic Forum (2016)

Social and emotional learning and the key competencies

The key competencies have rich underpinnings in research on social and emotional learning that is gaining in prominence in social and education policy

In 2019, coming full circle on its earlier efforts to define a set of general capabilities to guide the development of academic tests, the OECD intends to better understand those capabilities through instruments measuring social and emotional skills.

This effort is partly influenced by research from leading academics such as James Heckman, the Nobel Laureate economist whose work has claimed that the greatest returns on investment in education come “from nurturing children’s non-cognitive skills, giving them social, emotional and behavioural benefits that lead to success later in life...”³⁵

To understand how the OECD got there, it is important to understand the uptick of research that has occurred in social and emotional learning in the last 15 years. Recently, academic institutions, international organisations, and non-profit foundations have escalated calls for social and emotional skills to take greater prominence both in the everyday practices of schools as well as in the policy agendas of the organisations that support them. A sample of international efforts to bolster the standing of social and emotional skills as critical elements of learning include:

- A 2012 literature review from the University of Chicago, “Teaching adolescents to become learners”³⁶
- A 2013 literature review prepared for the UK Cabinet Office, “The impact of non-cognitive skills on outcomes for young people”³⁷
- A 2016 background paper for the UNESCO Global Education Monitoring Report, “Non-cognitive skills: definitions, measurement, malleability”³⁸
- A 2016 report from the World Economic Forum, “New vision for education: fostering social and emotional learning through technology”³⁹
- A 2017 paper from the Aspen Institute’s National Commission on Social, Emotional, and Academic Development, “The evidence base for how we learn”⁴⁰
- A 2017 framework from the OECD released as part of an effort to measure social and emotional skills, “Social and Emotional Skills: Well-being, Connectedness, and Success”⁴¹
- A 2018 report prepared by New Zealand’s Chief Science Advisor, “A Commentary on Digital Futures and Education”⁴²

The New Zealand report in particular includes “two foci for optimising benefits and mitigating risks” posed by digital futures in education:⁴³

- the development of critical thinking and critical literacies; and
- the development of social and emotional skills.

These reports were released years after the New Zealand Curriculum, which carries two implications:

- a) the New Zealand Curriculum was prescient in its inclusion of key competencies that include a broad mix of academic, social and emotional skills for learning; and
- b) quite a bit of research has come out since those competencies were determined that may be useful in helping teachers understand how the competencies impact teaching practice.

³⁵ Brackett, M. and Rivers, S. (2013)

³⁶ Farrington, C. and others (2012)

³⁷ Gutman, L. and Schoon, I. (2013)

³⁸ Zhou, K. (2016)

³⁹ World Economic Forum (2016)

⁴⁰ Jones, M. and Kahn, J. (2017)

⁴¹ OECD (2015)

⁴² Gluckman, P. and McNaughton, S. (2018)

⁴³ Ibid., p. 8

In background work for the OECD, a group of researchers summarised the importance of research on social and emotional learning for the education policy agenda:⁴⁴

Effective policies to promote skills straddle the missions of cabinet agencies and draw on the wisdom of many academic disciplines. They require broad thinking and recognition that both cognitive and non-cognitive skills are important ingredients of successful lives and are malleable to different degrees at different stages of the life cycle. They recognise that different skills cross-fertilize each other. Focusing on one dimension of human skills to the exclusion of other dimensions or on one stage of the life cycle to the exclusion of others misses fundamental aspects of human performance and development. Narrowly focused policies fail to capture synergisms in the expression and development of skills.

These conclusions are drawn in part from research that has correlated a host of social and emotional factors with positive life outcomes in education, employment, health, and other areas. These skills are often captured in a framework known as “OCEAN” – Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism, also referred to as Emotional Stability (Figure 7).⁴⁵ OCEAN is a

The OCEAN taxonomy of social and emotional skills has garnered increased attention from education policymakers and school leaders in recent years

generally well-accepted taxonomy in the field of personality psychology that some have argued serves as the “longitude and latitude” of longer lists of social and emotional skills.⁴⁶ While there is a proliferation of constructs and measures of social and emotional skills, the construct presented by OCEAN remains an umbrella framework, and “those who disagree [with it] have yet to agree on an alternative.”⁴⁷ In particular, the OECD has highlighted a number of studies correlating dimensions of the OCEAN framework with short-run markers such as staying in school and course grades as well as long-run outcomes like overall health (Figures 8, 9 and 10).

In the classroom, there are a number of reasons why teachers might want to be familiar with the social and emotional factors outlined by the OCEAN taxonomy (outlined further in Appendix 4). In 2011, for example, a meta-analysis of 213 interventions of social and emotional learning highlighted the importance of SEL for academic outcomes – researchers found SEL interventions improved students’ behavioural outcomes and added an 11-point gain in academic performance on achievement tests.⁴⁸

As most teachers recognise, social and emotional factors contribute greatly to learning. Far fewer have been given the training to deeply understand how those factors impact practice, however. That lack of training can then lead to a lack of understanding of social and emotional concepts found in the key competencies. For example, it’s one thing to notice that a student is not working hard and attribute a lack of effort to not being able to “self-manage” effectively. It’s another to have a set of mental models to explore as to why this might be the case, and then to be able to discuss them with colleagues in the context of key competencies. Teachers trained in SEL might ask the following questions regarding a student’s lack of effort, with theoretical concepts those questions pertain to in parentheses:

- Does the student suffer from a low self-concept at school overall? (self-concept theory)
- Does the student demonstrate low self-efficacy in this learning area? (self-efficacy theory)
- Might the structure of goals for learning have something to do with the students’ desire to meet those goals? (achievement goal theory)
- Does the student feel fine about his ability to meet goals, but simply not see value in doing so? (expectancy-value theory)
- Does the student think that putting forth effort is likely to result in positive outcomes? (growth mindset)
- Would pairing the student within a group lead to an improved ability for the student to grasp new ideas? (cooperative learning strategies)
- Does the student have requisite background knowledge on the tasks required, or is his working memory overloaded by unlearned basics that other students have mastered? (working memory vs. long-term memory)

⁴⁴ Kautz, T., Heckman, J. and others (2014), p 3-4

⁴⁵ Ibid. p 9

⁴⁶ Ibid.

⁴⁷ Gaertner, M. and Roberts, R. (2017)

⁴⁸ Durlak and others (2011)

- Is the student withdrawing from tasks out of fear of underperforming on behalf of a minority group? (stereotype threat—see Figure 11 for more detail)

Overall, both education policymakers as well as teachers working directly with students would benefit from understanding social and emotional factors underpin learning and how these factors are manifest in the key competencies of the New Zealand Curriculum.

Figure 7: The key competencies, OCEAN, and sample related concepts

Key competency	“OCEAN” connection and APA definition	Possibilities for related research and questions for educators
Thinking	Openness: “The tendency to be open to new aesthetic, cultural, or intellectual experiences”	<p>Metacognition – what are metacognitive strategies, for which students do they work best, and how might they support students’ ability to make sense of new ideas and experiences?</p> <p>Cognition: working and long-term memory – how does background knowledge contribute to how students make sense of new information?</p> <p>Curiosity – how is curiosity related to achievement; can it be developed among students?</p>
Managing Self	<p>Conscientiousness: “The tendency to be organised, responsible, and hardworking”</p> <p>Emotional Stability / Neuroticism: “Predictability and consistency in emotional reactions, with absence of rapid mood changes”</p>	<p>Self-concept of ability – what factors shape a student’s overall perspective on his/her ability, and how does self-concept impact motivation?</p> <p>Self-efficacy – what factors cause a student’s self-efficacy to be high or low in specific learning areas?</p> <p>Expectancy-value theory – is high self-efficacy enough to get students to engage in a task?</p> <p>Self-control and grit – can grit be taught?</p> <p>Growth mindset and malleable intelligence – does the type of feedback teachers give influence student motivation to learn? Does student knowledge of neuroplasticity influence their willingness to learn new things?</p> <p>Achievement-goal theory – how does the type of goal a student sets influence motivation?</p> <p>Test anxiety – what factors cause students to get anxious before tests, and how can they be limited?</p>
Relating to Others	Agreeableness: “The tendency to act in a cooperative, unselfish manner”	<p>Cooperative learning – under what conditions do students learn most effectively in groups?</p> <p>Goal orientation and group dynamics – how does the type of goal a group is working towards influence that group’s interactions?</p> <p>Classroom management – how does classroom environment influence the ability of groups to work together?</p> <p>Bullying – how does bullying impact academic performance?</p>
Participating and Contributing	Extraversion: “An orientation of one’s interests and energies toward the outer world of people and things rather than the inner world of subjective experience; characterized by positive affect and sociability”	Extra-curriculars – to what extent do outside experiences in sports, volunteering, or other activities translate into skills for the classroom?
Using Language, Symbols, and Texts	n/a	<p>Multiple intelligences and learning styles – does teaching to a student’s particular “learning style” result in more effective learning for that student?</p> <p>Technology: How does the presence of technology in the classroom influence students’ learning?</p>

Figure 8: Correlations between years of schooling and the Big 5 dimensions⁴⁹

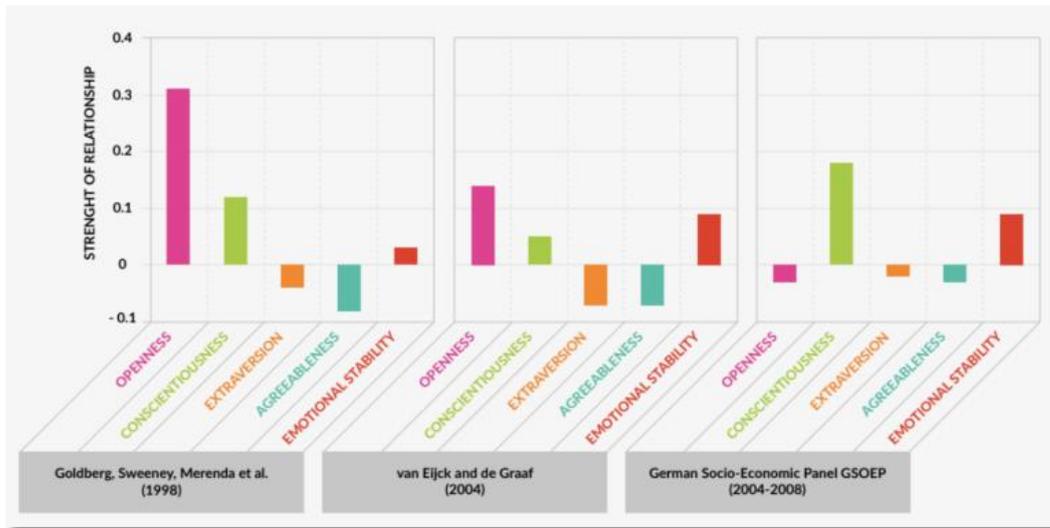


Figure 9: Correlations of Big 5 dimensions with course grades⁵⁰

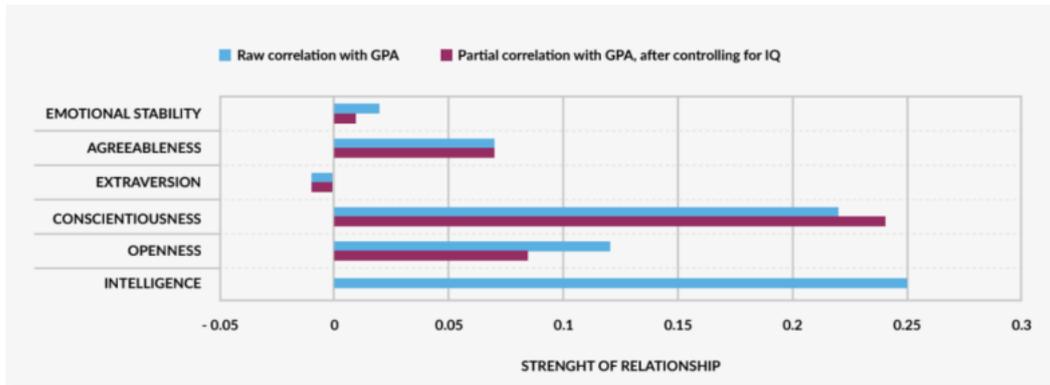
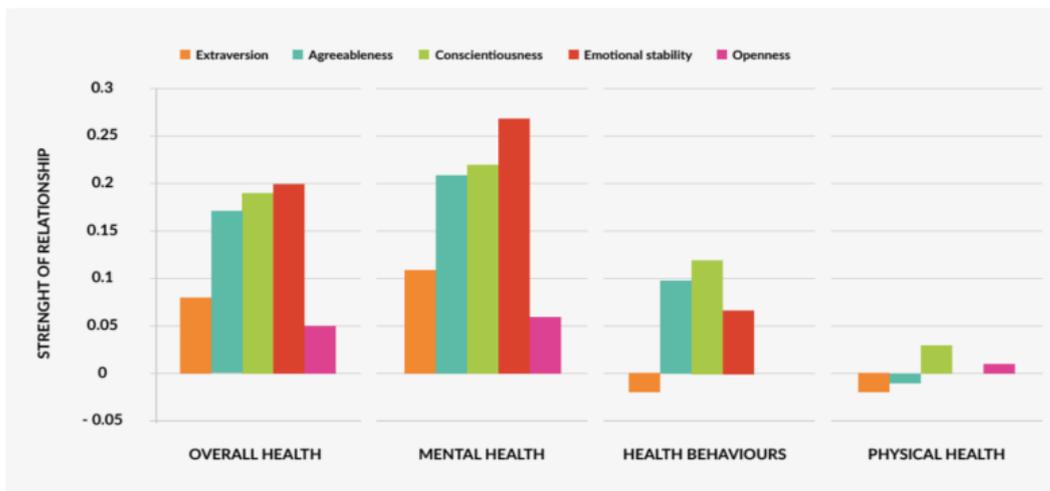


Figure 10: Correlation of big 5 dimensions with long-term health outcomes⁵¹



⁴⁹ OECD (2015), p. 11

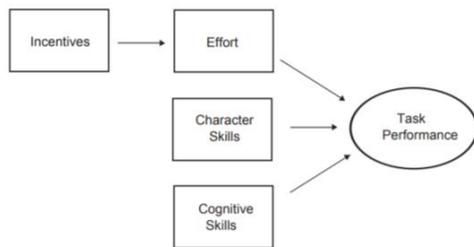
⁵⁰ Ibid., p. 12

⁵¹ Ibid., p. 14

Figure 11: Constructs for task performance and social emotional factors in test anxiety

When a student takes a test, knowledge is not all that is tested. The value the student places on the task, his or her expectation of how he or she might fare, and beliefs about his or her own academic ability can all influence the effort he or she puts forth and the persistence with which he approaches the work.⁵² That task, whether it's playing the piano or solving algebraic equations, ends up measuring a student's effort and ability to stay focused as well as the intended skill (Figure 11a).⁵³

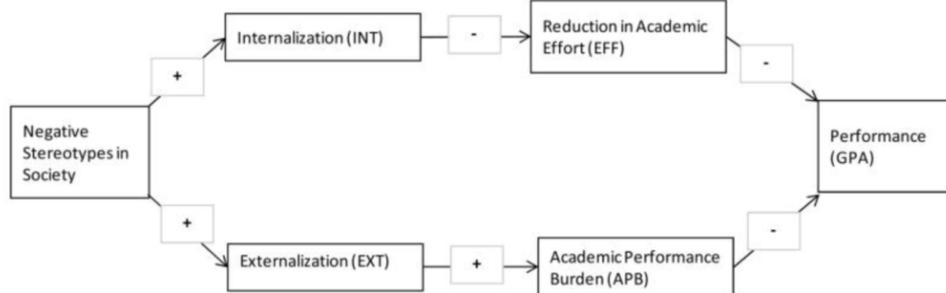
Figure 11a: A construct for task performance



And the situation in which the task takes place can influence performance – for example, research on stereotype threat has shown when participants are reminded that their performance reflects that of a larger ethnic or gender group, their performance worsens.⁵⁴ Some learners might disengage from the task in order to be able to attribute failure to a lack of effort (internalisation), and others experience a spike in anxiety as they feel the pressure of performing on behalf of a group (externalisation) (Figure 11b).^{55 56} A simple and low-cost method of addressing

stereotype threat that has proven effective in experimental settings is having students of a minority group reflect on their values that give them a sense of overall self-worth.⁵⁷

Figure 11b: Stereotype threat and task performance



Furthermore, adult relationships factor into the situation. Analysis of PISA data indicates that the quality and context of relationships students share with adults are associated with test anxiety:⁵⁸

When students perceive that their teachers treat them fairly, and that their parents and teachers help them build their self-confidence and set realistic goals, they are less likely to feel anxious when confronted with a test.

Regardless of cause, anxiety can sink performance on cognitive tasks.⁵⁹ And psychologists have a construct with factors that contribute to the ability to manage anxiety, as well as a host of other aspects of character and personality that impact learning: the Five Factor Model (FFM), also referred to as OCEAN. More information on the OCEAN construct can be found in Appendix 4.

⁵² Gutman, L. and Schoon, I. (2013), p. 2

⁵³ Kautz, T., Heckman, J. and others (2014), p. 11

⁵⁴ Ibid.

⁵⁵ Steele, C.M. and Aronson, J. (1995)

⁵⁶ Owens, J. and Massey, D. (2011)

⁵⁷ Aronson, J. and others (2009) p. 9-12

⁵⁸ OECD (2017)

⁵⁹ Borghans, L. and others (2008), P. 31

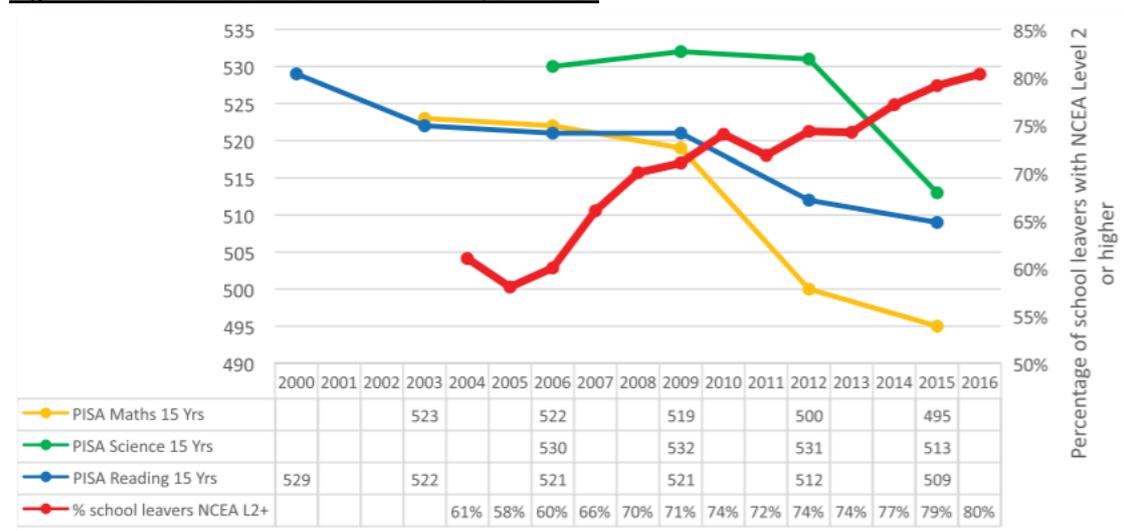
Credentials and rigour: a challenging backdrop for key competencies

New Zealand students are increasingly leaving school with credentials, but questions remain about the rigour of learning underpinning those credentials

By international standards, New Zealand maintains a high level of education quality – New Zealand students continue to score above the average scores of students from other countries in Maths, Reading, and Science on the OECD’s PISA tests of 15-year-olds, given every 3 years. But scores in Maths and Reading have generally been on a downward trend since 2000, with Science scores dipping substantially between 2012 and 2015. On the other hand, attainment of NCEA Level 2 has been on a steady upward trend since 2006, making remarkable progress from under 60 per cent of school leavers with Level 2 to over 80 per cent in ten years.⁶⁰

This inverse relationship between NCEA attainment trends and PISA trends raises questions about the rigour of learning signified by NCEA credentials as well as NCEA’s effect on instruction in general. However, recent data from the Trends in International Mathematics and Science Study (TIMSS), a set of international tests given to year 5 and year 9 students, indicates the recent PISA decline in New Zealand may be partly explained by cohorts of students with relatively low scores making their way through the system prior to the secondary level; TIMSS data show a decline in math scores for year 5 students from 2002 to 2010, with improvement coming from in the 2014 cycle.⁶¹ Science achievement for year 5 students also saw a significant jump in 2014/15.⁶² These trends may indicate a coming rise in PISA scores, or at least a stagnation of decline, but that remains to be seen in the 2018 round of PISA testing.

Figure 12: PISA and NCEA Level 2 attainment, 2000-2016



The rate at which students are successfully prepared for university offers another indicator of the share of New Zealand students prepared for academically rigorous work. From 2004-2017, achievement on standards qualifying students for university entrance actually dropped overall from 50.1 per cent of students in 2008 to 49.4 per cent in 2017 (Figure 12).⁶³ While NCEA Level 2 achievement has escalated steadily, the stagnation on university entrance rates can be partly explained by higher standards for university entrance on NCEA Level 3 credits, a decision made in 2011 and enacted in the 2014 school year.⁶⁴

⁶⁰ Lipson, B. (2018), p. 13

⁶¹ Comparative Education Research Unit, Ministry of Education (2017)

⁶² Caygill, R., Hanlar, V. and Harris-Miller, C. (2016)

⁶³ Collins, S. (2018a) *New Zealand Herald*. 11 April 2018

⁶⁴ ‘Changes Blamed for Huge Drop in UE Passes’, *Radio New Zealand*, 29 January 2015

In terms of equity, gaps persist across ethnic groups. Māori and Pasifika students have made great progress closing the NCEA Level 2 attainment gap over the years, but still lag behind Asian and Pakeha counterparts (Figure 13, left side). With regard to university entrance, Māori and Pasifika continue to trail Asian and Pakeha students (Figure 13, right side).

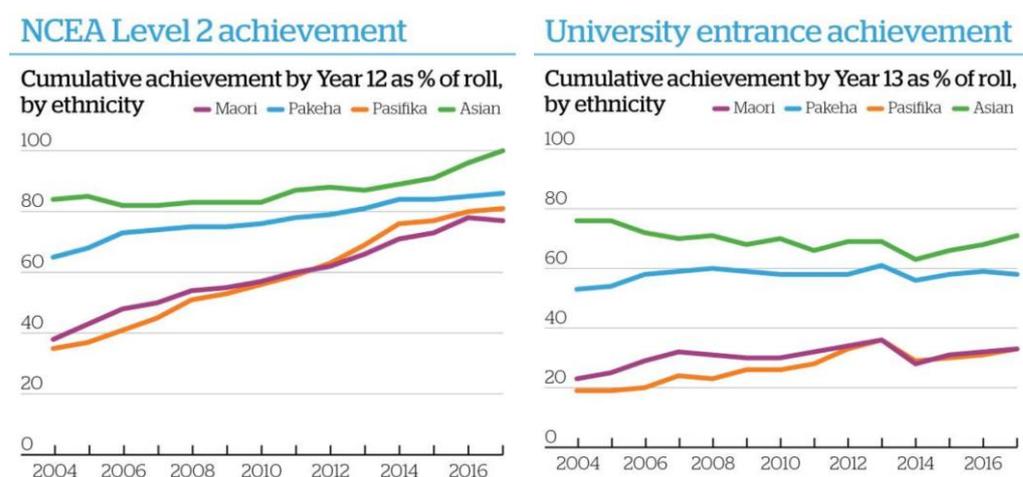
Some evidence suggests that improvement in NCEA attainment may stem in part from increasing familiarity with the system among schools and students. For example, a 2009 study of 4 mid-to-low decile secondary schools concluded:⁶⁵

Students tend to be “street smart” in their knowledge of the NCEA system, seeking to maximise credit gains, but are not always aware of the longer-term significance of their choices. Avoidance of achievement standards and external assessments can lead to students not meeting the prerequisites for more advanced study, missing out on important content areas in a subject, and jeopardising their chances of gaining the UE qualification or the level of achievement needed for tertiary study in a field of their choice.

That study found that a particular challenge exists in ensuring a high level of rigour in the pathways of all students and avoiding bias in structuring student course pathways:⁶⁶

There is evidence that Māori and Pacific students (clustered in lower decile schools) tend to be enrolled in “alternative” versions of core subjects such as mathematics, and in other “applied” subjects made up mainly of unit rather than achievement standards... There is also evidence from current Starpath research that Māori and Pacific students tend to take fewer subjects and complete fewer credits from the approved list of subjects.

Figure 13: NCEA Level 2 and UE pass rates, 2008-2017



Even among students who do enter university, questions about preparation remain. A 2014 study for New Zealand’s Tertiary Education Commission compared NCEA’s literacy and numeracy requirements with measures used to gauge literacy at the adult level; it found that 40 per cent of Year 12 students and 50 per cent of tertiary students who met NCEA qualifications for literacy and numeracy did not meet threshold benchmarks for adult testing of literacy and numeracy.⁶⁷ The report concluded:⁶⁸

The literacy and numeracy requirements for NCEA appear to be attainable with levels of reading and numeracy skill below the current literacy and numeracy benchmarks. While it might be desirable to demonstrate that high proportions of students are meeting these requirements, several consequences of weak criteria for meeting them might ensue. First, many individuals might be misled into believing that they are functionally literate and numerate when they are not. Second, employers or higher-learning institutions may disregard the literacy or numeracy credentials linked to NCEA and establish their own testing regimes. Third, there is a risk that policy makers may overestimate the literacy and numeracy competencies of school leavers.

⁶⁵ Madjar, I., McKinley, E., Jensen, S. and Van Der Merwe, A. (2009). p. 6

⁶⁶ Ibid.

⁶⁷ ‘School Leavers’ Skills under Fire’, *Radio New Zealand*, 7 March 2016

⁶⁸ Thomas, G., Johnston, M. and Ward, J. (2014), p. 37

While New Zealand schools compare relatively well to international averages and have shown improvement in the certification of students, two critical challenges remain:

- Equity – differences persist both in the attainment of qualifications across students of different ethnic groups and income levels
- Rigour – while more students are leaving school with qualifications, there is a risk of a lack of confidence that those qualifications truly prepare students with literacy and numeracy skills applicable for life and work

It is therefore critical to keep in mind that key competencies ought to play a role in addressing these challenges – for example, by giving students the social and emotional skills they need to build healthy relationships, persist through difficult situations, and challenge themselves academically.

II. FINDINGS FROM RESEARCH REVIEW AND INTERVIEWS

In 2012, professors Michael Fullan and Andy Hargreaves outlined their perspective on what is needed to develop high quality teaching:⁶⁹

People can only teach like pros when they want and know how to do so – when they have the right knowledge and background, the colleagues around them who will keep them performing at their peak, and the time and experience that underpin the ability to make wise judgements and decisions that are at the heart of all professionals' actions.

Thus with regard to instructional change, teachers need to value the change, know how to implement it, and have time to reflect on new strategies with colleagues. To this list, I would add a fourth dimension – the system in which teachers work should not wash out any of these efforts, nor incentivise practices that run counter to them. That is, the system needs to offer a coherent set of guidelines and incentives for optimal practices.

As I reviewed research and visited schools, I kept these ideas in mind through four primary questions:

- Values – to what extent do stakeholders value the key competencies?
- Knowledge – what kind of knowledge has been built around the key competencies?
- Capacity – how has the school supported the learning process of its stakeholders?
- Coherence – how do the larger set of policies guiding the school impact implementation of the key competencies?

This section presents findings in each of these areas. Findings suggest the following:

- Values – teachers generally indicate that they value practices associated with the key competencies, but actions do not indicate that those practices are implemented at scale
- Knowledge – a range of stakeholders would benefit from a deeper understanding of exactly how the key competencies underpin learning
- Capacity – organisational capacity to drive instructional change at the school level and across the system is currently limited
- Coherence – multiple organisations control policies and tools that impact the implementation of the key competencies, and these policies do not necessarily work in tandem with one another

⁶⁹ Fullan, M. and Hargreaves, A. (2012). p. 5-6

Finding Set 1: The Value-Practice gap in secondary teaching

Teaching practices generally lag behind the value placed on the key competencies

By international standards, New Zealand has a strong reputation for creating the conditions under which students might develop key competencies for the future. For example, a recent analysis from the UK-based Economist Intelligence Unit (a corollary of *The Economist*) considered New Zealand the world's best system for teaching "future skills." The ranking was earned for collaborative partnerships between education and industry, a curriculum that takes into account skills for the future, and a system that provides a high quality teacher education.⁷⁰

While it is possible to conclude that the current system has conditions ripe for a focus on learning to learn, peeling back layers of teacher practice reveals that there is still potential growth in the extent to which teachers develop the key competencies with students. In April 2018 an Education Council convening of 35 experts from schools, government agencies, and service providers met to discuss the key competencies, a group which included stakeholders from the MoE, NZQA, NZCER, ERO, CORE Education, 21st Century Skills Lab, and Massey University, among others. Participants concluded:⁷¹

There is a gap between the high policy statements/global vision documents, and the experienced reality of leaders and teachers working to embed competencies in individual settings.

The data that follow provide indicators that the work of embedding the key competencies into teacher practice is ongoing at a systems level.

F1.1 Secondary teaching practices with room for improvement

Many aspects of the key competencies are not "done well" across the system even when they are valued

The competencies are rich, elemental aspects of learning. The New Zealand Curriculum states that they are "the key to learning in every learning area".⁷² It goes on to state that "the key competencies are both end and means. They are a focus for learning – and they enable learning."⁷³

But the 2017 national survey of teaching practice found that both primary and secondary teachers struggle to implement critical aspects of the New Zealand curriculum related to the key competencies:⁷⁴

Not surprisingly, it is the practices related to the less familiar... aspects of the New Zealand Curriculum that were new, future-focused, and have not been systematically supported that fewer teachers saw themselves carrying out well or very well. These include ensuring students direct their own learning pace, content, and goals; think critically and talk about what and how they are learning; [use] student feedback to work out what is most important to focus on and the best strategies to use, and [analyse] the impact of their teaching on each student's learning.

Specifically, a review of the practices that few primary and secondary teachers reported as "being done very well" reveals a set of actions one might consider critical elements of "Thinking", "Participating and Contributing", "Managing Self" and "Relating to Others" (Figure 14).⁷⁵

⁷⁰ The Economist Intelligence Unit (n.d.)

⁷¹ Education Council symposium (2018), 4 April 2018

⁷² *The New Zealand Curriculum* (2007), p. 12.

⁷³ *The New Zealand Curriculum* (2007), p. 38

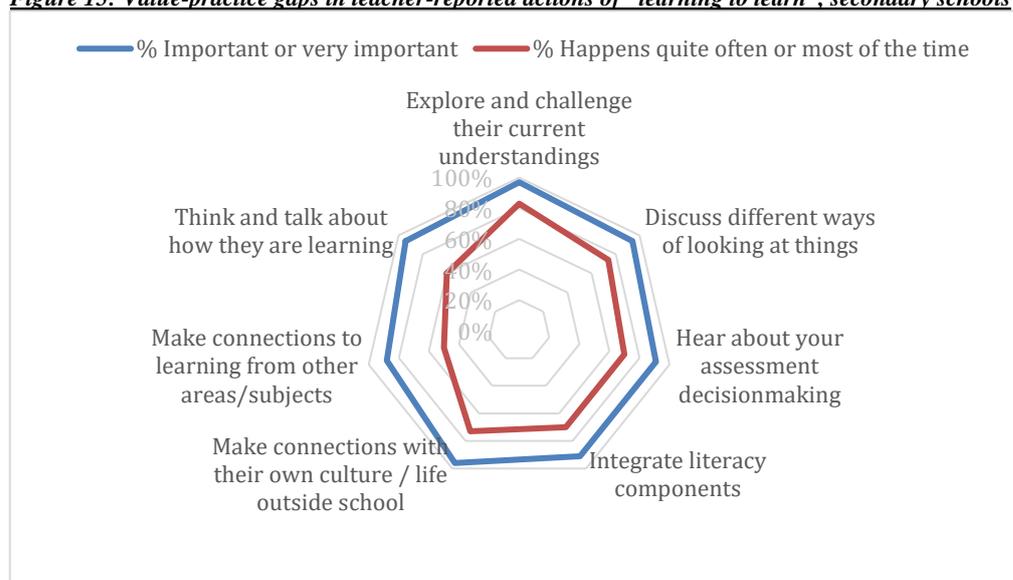
⁷⁴ Wylie, C. and others (2018)

⁷⁵ *Ibid.*

Figure 14: Teaching practices with room for improvement, 2017 national teacher survey⁷⁶

Domain	Teaching Practices ranked by 25 per cent or fewer of teachers as being done “very well”
 <i>Critical thinking, reflection, and feedback with students</i>	<ul style="list-style-type: none"> • Ensure students think critically and talk about what and how they are learning • Ensure students direct their own learning pace, content, and goals • Ensure students interact with information to critique and create knowledge, and transform it • Engage students in specific and timely feedback and feedforward on their learning • Engage in in-depth curriculum-related discussions with individuals or groups • Draw on students' different languages, cultures, values, knowledges, and practices as resources for the learning of all
 <i>Parent and community engagement in learning</i>	<ul style="list-style-type: none"> • Collaborate with the local community so that their expertise can be used to support learning in class or other school activities • Support the local community by ensuring that students have opportunities to actively contribute to it in ways valued by the community • Collaborate with parents and whānau so that their expertise can be used to support collective learning in class or other school activities • Use the knowledge that parents and whānau have about their child to support the student’s learning
 <i>Inquiry and analysis of impactful teaching strategies</i>	<ul style="list-style-type: none"> • Use what the research literature says about teaching and learning to inform your choice of strategies to use with your students • Use both information about your own students and what curriculum support documents say about teaching and learning to help you select the best strategies and to prioritise what you teach • Analyse the impact your teaching has on each student's learning • Use student feedback on your teaching to work out what is most important to focus on and the best strategies to use

Figure 15: Value-practice gaps in teacher-reported actions of “learning to learn”, secondary schools



⁷⁶ Wylie, C. and others (2018)

F1.2 Content crowd-out in secondary schools

The content focus of secondary school training and school organization can erode responsibility for incorporating the more general skills of the key competencies into practice

Every three years, NZCER completes a comprehensive survey of secondary school teachers. Using 2015 data, the last year available, researchers identified a value-practice gap in teacher support of students “learning to learn” in secondary classrooms:⁷⁷

Almost half the teachers (48 percent) said that students [never or sometimes] experienced opportunities in their classes to make connections to other learning areas...Similarly, 39 percent of the teachers thought their students [never or sometimes] had opportunities to think and talk about how they are learning...It would seem that a number of teachers who highly value the described practices are unable to translate this sense of importance into regularly experienced learning opportunities.

A visual picture of this data can be found in Figure 15 (previous page), the left side of which shows particular gaps in metacognition, knowledge transfer across disciplines, and connecting learning to prior knowledge or community contexts.⁷⁸

Another NZCER report found few changes in emphasis of competencies since 2012, and many differences in implementation across subject areas:⁷⁹

There has been little change since 2012 in how teachers are incorporating the key competencies in students’ learning experiences, how they viewed the importance of metatalk opportunities and how often they provided these for their classes. The 2015 data largely replicate the subject group differences that emerged in 2012: teachers of English and Languages were most likely to provide their classes with metatalk opportunities, and teachers of Mathematics and Science were the least likely.

Echoing these findings, many interviewees for this report frequently spoke of the challenge of encouraging secondary school teachers to support students’ thinking, planning, relational, and goal-setting skills alongside the traditional practice of content delivery. One teacher at a school implementing significant project-based learning highlighted the difficulties inherent in that work:⁸⁰

We weren’t trained as mentors or tutors but you can fall into that role... [and] some teachers are reluctant to admit that they may not have the skills to manage projects with students. This speaks to the need to define and develop knowledge of the key competencies. What is self-management, really?

Comments from school leaders indicated that while teachers generally value the types of skills that students will need to manage projects well, they don’t necessarily see it as their job to train students on those skills:⁸¹

A lot of our teachers don’t know how to manage projects with students...it’s out of their comfort zone...they trained to be a biology teacher and this isn’t their job.

Some school leaders address this challenge at the hiring stage, as one principal noted:⁸²

Secondary teachers are not trained in 1:1 meetings, and they often don’t value them. It seems like they either value them and have the skills to do them well or they don’t. So what we try to do is hire people who value those types of learning relationships. I figure we can upskill teachers on their content knowledge if need be, but I haven’t found that we can do that for skills-coaching directly with students.

Overall, survey data and interviews paint a picture in which most secondary teachers value the key competencies as important for students to develop. However, teachers may have mixed feelings about whether it is their role to develop them, and varying levels of knowledge about how to do so.

⁷⁷ Hipkins, R. (2015)

⁷⁸ Ibid.

⁷⁹ Wylie, C. and Bonne, L. (2015)

⁸⁰ Author interview. 23 May 2018

⁸¹ Author interview. 23 May 2018

⁸² Author interview. 29 May 2018

F1.3 Assessment culture at the secondary level

Data indicate that within many secondary schools, assessment culture trumps a focus on learning

In 2015, the Education Review Office (ERO) released a report from visits to 68 secondary schools focused on overall student well-being. The Prime Minister's Youth Mental Health Project commissioned the report in response to findings that 20 per cent of young people in New Zealand exhibited behaviours or emotions or have experiences that put their well-being at risk.⁸³ Within the key competencies, educators can find grounding for that well-being: managing self might involve regulating emotions, and relating to others can spark inquiry into emotional intelligence or empathy. But the ERO findings suggest that the work of embedding the key competencies across the curricular areas was not common, nor commonly understood by students.⁸⁴

Some schools were exploring ways they could deliberately support the development and use of key competencies across learning areas and through academic counselling...but not all of these schools had aligned key competencies across learning areas, so... it was left to students to make sense of the different messages.

The report concluded that an assessment-driven culture saturated the learning environment of many secondary schools, with deleterious effects on student well-being.⁸⁵

... The key finding from this evaluation was that students in all schools were experiencing a very assessment driven curriculum and assessment anxiety... Schools need to explore the intent of NCEA and The New Zealand Curriculum (with the senior secondary guidelines) and develop a curriculum that is underpinned by the vision and principles of these documents.

The majority of interviewees for this report echoed these findings. For example, a principal noted:⁸⁶

NCEA virtually becomes the curriculum for the senior school. Most teachers teach to the NCEA assessment rather than teach it in a deep learning way.

A deputy principal spoke of the impact of NCEA on teachers at different levels of his secondary school in terms of the propensity to develop new practices:⁸⁷

Our Year 9-10 teachers are definitely more willing to take risks, because NCEA drives everything. Even kids aren't interested in stuff unless it has credits attached to it.

The effect of "chasing credits" can even spill over into university level courses. A former course instructor at the university level noted:⁸⁸

I can remember teaching students at university who had just come in through NCEA saying 'what do I need to do to get credit in this class?' They were looking for a way to break down the work into little component parts. It was an adjustment for them when our course didn't work that way.

Were NCEA exams to represent an automatic guarantor of a high degree of rigour with a focus on deep learning, backwards planning principally from NCEA requirements might represent an effective instructional planning strategy. As it stands, the sheer number of NCEA credits means that students may pursue pathways that have a high probability of success at the expense of offering a rigorous challenge.

Of final note is the degree to which assessment cultures are emphasised in the discourses of teachers. A 2012 case study of six secondary schools found that teachers in lower decile areas had to work harder to convince students of the value of schooling and its connections beyond school, while higher decile teachers spoke more often of achievement in academic disciplines. In high decile schools, the report noted, "the individualism valued...could work against the collaboration and integration valued in the key competencies and demanded in most workplaces".⁸⁹

⁸³ Education Review Office (2015) p. 1

⁸⁴ Ibid, p. 19

⁸⁵ Ibid. p. 29

⁸⁶ Author interview. 26 March 2018

⁸⁷ Author interview. 27 March 2018

⁸⁸ Author interview. 13 June 2018

⁸⁹ Alcorn, N. and Thrupp, M. (2012)

Finding Set 2: Knowledge-building for key competencies

A range of school stakeholders would benefit from a deeper understanding of how the key competencies underpin day-to-day aspects of learning

Unless teachers have a sound grasp of what the key competencies mean, and how they underpin the daily process of teaching and learning, there is substantial risk that they will simply not become an integral component of instruction. As participants from schools, MoE, NZQA, NZCER, ERO, CORE Education, 21st Century Skills Lab, Massey University, and elsewhere noted in a 2018 Education Council convening, the key competencies remain top of mind for teachers. However, knowledge of how to bring them into practice for full implementation is lagging:⁹⁰

The last decade has seen an enormous effort go into embedding key competencies into plans of learning. The competencies have permeated into teachers' thinking. The devil, however, is in the doing.

Using data from existing research and interviews, findings in this section highlight the extent to which teachers fully grasp how the key competencies underpin learning within their content areas.

F2.1 The futures focus of key competencies

A futures focus may obfuscate how the key competencies impact day-to-day teaching challenges

As in OECD publications, much of the discourse on key competencies in New Zealand education has highlighted a focus beyond school and into the future. For example:

- In the early 2000s, the Ministry of Education (MoE) consulted employers about future societal and economic developments through the “Catching the knowledge wave” conference.⁹¹
- A 2014 NZCER publication meant to help stakeholders implement the key competencies took the title “Key Competencies for the Future” and frames much of its thinking around the importance and opportunity for students to solve “wicked problems”.⁹²
- On Te Kete Ipurangi (TKI), the online home of the New Zealand Curriculum, the answer to the question “Why do key competencies matter?” is that “the key competencies take account of the vast changes in society, work, knowledge, and technology that have occurred since education systems were established”.⁹³

These works represent enduring and exceptional contributions to thinking about what it means to support student learning in the twenty-first century. In particular, the NZCER book *Key Competencies for the Future* provides a solid background in how the competencies support one another, richly weaving theory and practical examples together in a text that provides clear examples and provocative thinking for educators. The 2017 work “Weaving a Coherent Curriculum” provides another nuanced and insightful perspective into how capabilities can underlie a robust curriculum.⁹⁴ Both of these works, as in many resources on the TKI website, call for disciplinary learning to occur alongside the key competencies.

But roughly ten years on from the introduction of the New Zealand Curriculum we’ve seen that teaching practices that support the key competencies are stubbornly underutilized (see “Finding 1” section of this paper). Two factors related to a futures focus may undermine the extent to which schools emphasise the key competencies:

⁹⁰ Education Council symposium (2018), 4 April 2018

⁹¹ Hipkins, R. (2018), p. 3

⁹² Hipkins, R., Bolstad R., Boyd, S., and McDowall, S., (2014)

⁹³ Ministry of Education (2014).

⁹⁴ Hipkins (2017)

1. Schools may not agree on what the future looks like, leading them to prioritise vastly different skills or simply continue with practises that have always seemed to work well; and
2. Schools may simply disagree on the best way to prepare students for the futures they conceive.

In interviews across the sector, I did not find the first point to be much of an issue. There was general agreement on the type of future students are preparing for: one with a more diverse population, grounded in a knowledge economy in a networked world, requiring individuals to be adaptive in individual careers and equipped to face globally complex problems.

But on the matter of how to prepare students for that future, opinions varied widely. Some schools sought to replicate future conditions in their current state, for example building interdisciplinary courses, hosting most instructional resources online and devoting significant time in student schedules for project-based learning in collaborative teams. Many of these schools seemed to employ a mindset of “building the plane while flying it,” believing that learning through experience, trial and error will provide students with lasting lessons that will prepare them for the future.

Many schools simply disagree on the most effective way to prepare students for the futures they conceive, leading to a wide variety of instructional approaches in the present

Other schools took an approach that might be characterised as “building the best possible plane for each student before it has to fly.” These schools often took an approach that a quality secondary school experience is one that provides students the disciplinary knowledge they will need as a foundation to think critically, continue to learn and work well with others once they do move into an uncertain, complex world.

Expert guidance would seem to bridge a false dichotomy between building knowledge and giving students opportunities to work collaboratively and reflect deeply. For example, in one discussion of key competencies, NZCER researchers noted:⁹⁵

Students need to build their discipline-specific literacies so that they can use the relevant discourses in appropriate ways...the teachers referred to in this chapter...made sure that students had access to the established disciplinary knowledge with which to think, talk about, relate to one another, and reflect on their own values, beliefs, and perspectives

That work framed much of its thinking in the context of “wicked problems” such as climate change, food security, and economic inequality, an insightful framing, and one of particular interest to many New Zealand schools looking to reimagine learning for students.

But often the most common “wicked problems” I heard from secondary teachers and school leaders were grounded in how to get students to come to school, engage meaningfully in learning, or pass NCEA exams at rates acceptable to demanding parents. In that sense, unless teachers see clear and compelling connections between the competencies and the immediate pressures they face, they may be reluctant to incorporate them into their practice, or may simply not know how to do so effectively.

That observation comes with two implications for policymakers:

1. Processes for building knowledge of the key competencies need to be well-supported and embedded in the system.
2. Pressures that dictate teacher priorities, such as assessment practices and school evaluation, need to be thoughtfully evaluated alongside the ultimate goals of the system.

F2.2 Independent tools and strategies for key competencies

Efforts to determine how to incorporate the key competencies into practice vary widely across schools – this may stem from a lack of tools and strategies to support dynamic learning processes

⁹⁵ Hipkins, R., Bolstad R., Boyd, S., and McDowall, S., (2014) p. 47, 83

One of the key themes that emerged from the 2018 Education Council symposium on 21st century capabilities centred on sharing on a lack of expert knowledge available to guide implementation:⁹⁶

Huge amounts of (needless?) energy is expended by each of our schools, kura, kōhanga and early childhood centres in design. There is a need for some pre-packaged thinking to be provided to the profession including examples of sophisticated curriculum understanding presented as simple activity/content strands with competencies woven through... There are individuals doing this but the design would be strengthened if it was done by experts and provided to teachers to work with.

There is some evidence in research into self-regulated learning to support that final claim. A 2008 meta-analysis of 74 studies with over 8,000 students investigated the effects of interventions in metacognition in primary and secondary schools. The paper found that interventions were more effective when delivered by researchers rather than teachers, with knowledge and tools deficits to blame:⁹⁷

[In general] teachers lack knowledge about the concept of self-regulated learning. Observation studies also showed that they spend only [a] little of their instruction time on [cognitive and metacognitive] strategy teaching... In addition, whether teachers even realise changes in their instruction is dependent on their prior beliefs and value orientations. Therefore, providing them with information is not sufficient, but should be completed by transforming the information into tools usable for teachers and by involving the teachers in the research project.

During visits to school sites I met a few teachers with deep knowledge of student metacognition, sophisticated practices for feedback, and an understanding of the nuances of goal-setting with students. But these were often at schools that had substantial professional learning time above typical schools, or were teachers with a personal interest in these topics. Overall, there has been reluctance in the sector to provide tools and strategies that schools can use to define the key competencies in favour of letting each school unpack the key competencies on its own. This is in part by design:⁹⁸

Each school unpacks the key competencies on its own, leading to a variety of approaches to concepts like self-management

Key competencies are essentially a curriculum idea – they are not specific things. They can't be treated like a prescription that has been set out for people to decode and then just follow... [a] dynamic process of interpreting [the key competencies] needs to happen as close as possible to the teaching and learning action.

But many interviews revealed the difficulty of distilling that work down to the level of the teacher, to a situation in which teachers plan instruction that supports the development of key competencies. A teacher reflected on her particular schools:⁹⁹

We all independently interpret the front end of the curriculum because there are no defined progressions. Nothing has been unpacked. We all have to do that individually.

And when schools do think through the key competencies, emphasis varies (such as the idea that key competencies even follow progressions to begin with). Interviews with teachers, students, and principals at the 21 schools visited for this study highlighted the diverse perspectives schools bring to interpreting the competencies for their staff and students, and the challenges schools face in doing so.

For example, some principals spoke of using the key competencies as a means to shift from a reliance on direct instruction to a more student-centred approach to learning:

The key competencies informed our approach to switch from the teacher being at the front of the classroom all of the time.¹⁰⁰

We started emphasising the key competencies because we wanted to reduce the amount of direct instruction in our building.¹⁰¹

⁹⁶ Education Council symposium (2018), 4 April 2018

⁹⁷ Dignath, C. and Büttner, G. (2008)

⁹⁸ Hipkins, R., Bolstad R., Boyd, S., and McDowall, S., (2014) p. 17

⁹⁹ Author interview. 21 May 2018

¹⁰⁰ Author interview. 17 May 2018

¹⁰¹ Author interview. 9 May 2018

Others quickly associated the key competencies with trying to develop independent learners in classrooms across the school:¹⁰²

I really wanted to help get our school to focus on self-management.

The descriptions of the key competencies, by design, leave open broad pathways for interpretation. And it seems that some key competencies are more important than others, or at least easier to understand – by and large interviews on the key competencies turned almost immediately to self-management, collaboration, or community-based interaction. As one principal noted, “managing self and relating to others are really the tops for us”.¹⁰³ Concrete discussion of strategies and policies around “thinking” or “using language, symbols, and texts” was harder to come by at the 21 schools I visited.

Interviews also gave me the sense that the general nature of the key competencies makes them easy to set aside in favour of knowledge that can be more easily assessed and reported on, especially when the results of those reports—in the form of NCEA pass rates—end up in league tables in media outlets. As one teacher noted:¹⁰⁴

‘Why would I teach something if it’s not going to be assessed?’ That’s what we hear a lot of from our teachers. We talk about making the front end of the curriculum a priority, but then the conversation shifts to what needs to be deprioritised to make room.

In some cases, schools used the key competencies as general values for the school, such as “curiosity” or “collaboration”, and rarely used them in instructional conversations. As one principal noted when asked about incorporating the key competencies into learning: “I was afraid you’d ask me that.”¹⁰⁵

It should be noted that substantial and noteworthy effort has gone into documenting all of the various ways that schools make sense of and interpret the key competencies. Te Kete Ipurangi (TKI), the online support channel for the New Zealand Curriculum managed by MoE and contracted out to service providers, has a trove of resources available for schools. Most of these resources date to 2014 or earlier, a fact some interviewees attributed in part to the systemic energy directed toward the rollout of National Standards.¹⁰⁶ Additionally, NZCER, ERO, and MoE have gone to great lengths to highlight best practices through reports, publications and videos.

Schools may prioritise some key competencies over others, or simply state them as values important to the school

But at the secondary level those efforts, at this point, do not seem to have led to a system-wide elevation of the competencies the New Zealand Curriculum deems critical for learning and life. Reflecting on the challenge as a whole, a 2016 book on NCEA from NZCER summed up the situation:¹⁰⁷

The visionary front half [of the New Zealand Curriculum] was widely endorsed and supported across the whole education sector. However... it became increasingly evident that planning a responsive curriculum, based on a framework that permits multiple possible combinations of the various curriculum elements, is a highly complex design task. To take one core design dilemma, the structure does not (cannot) show how to integrate aspects such as key competencies with the more traditional curriculum content. Even researchers working actively on understanding the potential of key competencies and building resources to support new curriculum thinking have found this challenging. How was it ever envisaged that schools and teachers could independently do this for themselves?

In that climate, students have very different understandings of what they view as most successful for life and learning.

¹⁰² Author interview. 9 May 2018

¹⁰³ Author interview. 21 March 2018

¹⁰⁴ Author interview. 31 May 2018.

¹⁰⁵ Author interview. 28 March 2018

¹⁰⁶ Author interviews. 27 March 2018,

¹⁰⁷ Hipkins, R., Johnston, M. and Sheehan, M. (2016), p. 152

Finding Set 3: Capacity limitations

In many schools, organisational capacity to integrate instructional shifts into practice is limited

If individual teachers develop deep knowledge of the key competencies, there is no guarantee that they build upon that knowledge with other staff members. As Cambridge professor Jean Rudduck once noted, “Education is one of the last vocations where it is still legitimate to work by yourself in a space that is secure against invaders.”¹⁰⁸

Principals thus make critical decisions around the extent and nature of collaboration among staff, decisions that carry great weight on the amount of organisational learning that occurs within their buildings. And beyond principals, middle leaders like department heads drive much of the learning in secondary schools.

However, as findings in this section discuss, New Zealand principals indicate that time to provide instructional leadership is limited. Furthermore, there is evidence that some school leaders struggle to engage with recent changes to centrally-funded professional learning.

F3.1 Principal limitations in instructional leadership

Principals report limited time and resources available to work with staff on major shifts in instruction

One of the foremost predictors of whether or not schools took time to integrate the key competencies into their local curriculum design came from the leadership level: several leadership teams I visited had a planning year to observe other schools and think through learning design at a global level. Others benefitted from simply getting out and seeing other schools in their region.

As a former teacher of a school with a long lead time before opening noted:¹⁰⁹

We had two weeks to just read when I started, and that was critical in helping us build an overall rationale for change.

Another school reported spending a year sending groups of teachers out to other sites prior to beginning a more technology-enabled learning environment:¹¹⁰

We sent staff to other schools in the year prior to launch, five staff did observations at other school sites. And then we did our own PD [professional development] after school hours.

A school with a tradition dating back to the 1800s noted the particular challenges of change management with a strong culture and veteran staff:¹¹¹

We have a culture here where everyone gets to have their say, and we have people who have been teaching for decades...so we've tended to encourage a pilot approach [with interdisciplinary competencies]. It's slower, but there's less risk of burnout, and a higher probability of success for those that take it on.

A principal described what was a fairly typical week of professional learning, and one with a relatively high degree of staff-wide collaboration compared with other schools visited:¹¹²

Monday afternoon we have staff meetings, we focus on capability as tutors. Kids start Wednesdays at 9:30-10am. That's been going on for a while. Actually I never had that before and didn't think it was that important – but I quite like it, I think I was wrong about that. For that time we focus on course

¹⁰⁸ Fullan, M. and Hargreaves, A. (2012), p. 106.

¹⁰⁹ Author interview. 22 May 2018.

¹¹⁰ Author interview. 17 May 2018

¹¹¹ Author interview. 29 May 2018

¹¹² Author interview. 21 May 2018

design and lesson planning. So we're getting about 2 hours per week of PLD [professional learning and development] in.

That two hours per week was on the high side of staff-wide professional learning time. When schools do devote time to major instructional shifts, that time is limited. One of the schools visited for this study had sustained support with a service provider – three hour-long sessions per term, or a total of 12 hours of facilitated collaboration during the year. Getting staff to embrace changes was a struggle.

Perhaps this should not be surprising: some evidence suggests that PLD experiences of 14 hours or less have little impact on student achievement, while sessions that are “content-specific” and average 49 hours over the course of 6-9 months make a substantial impact on student achievement.¹¹³

But most principals report limited time to work with staff. For example, the Post Primary Teachers' Association (PPTA) guidelines currently limit schools to five call-back days for professional learning, and an additional five days of teacher time that can be booked for administrative purposes (call back days are those without students). Among schools visited, principals rarely used all ten of these days, preferring to leave that time open for teachers. As one principal said:¹¹⁴

Technically we're allowed up to ten call-back days but staff don't react well to those. So we come back two days before Term One starts.

Another principal noted that call-back days were not even a consideration for a staff that was putting in extra hours that go seemingly unrecognised:¹¹⁵

I don't do call-back days. My teachers are doing debate club on Wednesday nights and rugby on Saturdays. 95 per cent of them have some kind of extra responsibility beyond teaching, and that's way higher than the national average. So we have 40 minutes on Wednesdays to meet as a staff.

Without significant time allotted for staff-wide professional learning, collaborative inquiry into instructional practice often becomes the purview of the heads of department of secondary schools. A common sentiment among many interviewees was that this left teachers vulnerable to a “myopic” focus on teaching single subjects, leaving holistic conversations about learning and student well-being on the backburner.¹¹⁶ This was evident in multiple schools, typically with large student rolls, that hadn't found the time to focus systemically on learning across the disciplines. As a deputy principal noted:¹¹⁷

We're seeing more emotional problems and anxiety than we've seen before that I think is coming out of social media so we're doing a lot of stuff on well-being that we haven't done in the past...but one thing we haven't done is really develop a framework for thinking and learning at our school.

Many schools I visited allocated around an hour per week for departmental meetings; in some countries teachers spend 15 to 25 hours per week working with colleagues and meeting with parents, and some studies have called for ten hours per week of time for teachers to plan collaboratively and analyse student work in order to ensure effective professional learning.¹¹⁸

When principals have limited time for staff collaboration, instructional leadership often falls to heads of department who must sustain focused professional learning efforts

Part of the reason that key competencies have been slow to take root in the system may be because focused, sustained professional learning is difficult to plan under current school calendars and timetables. Another reason may be that principals simply lack the time under the current demands of their role to be instructional leaders. One principal of a smaller secondary school in a minor urban area explained:¹¹⁹

You're never trained for the financials. You have to learn how to write contracts, for example. In theory the Board [of Trustees] can help, but our Board doesn't have a lot of professional background. And property management was a nightmare. It took me a while to figure out how to use the person [at the MoE]. All the PD says you have to lead the learning in your building, but I don't know how you do that with all of the other responsibilities that you have as a principal.

¹¹³ Yoon, K. S., and others (2007)

¹¹⁴ Author interview. 15 May 2018

¹¹⁵ Author interview. 25 June 2018

¹¹⁶ Author interview. 28 May 2018

¹¹⁷ Author interview. 27 March 2018

¹¹⁸ Darling-Hammond, L., Chung Wei, R. and Andree, A. (2010)

¹¹⁹ Author interview. 17 May 2018.

In theory, a board of trustees should be able to provide support for some of the governance aspects of the job, but in practice, principals continue to shoulder a huge workload. For example, while performance management is a legal responsibility of the board, a recent survey identified that nearly 1 in 4 principals noted that they take full responsibility for the process.¹²⁰

The overall picture from school visits is one in which staff development time was limited, with much of the instructional leadership in buildings (particularly in larger schools) delegated to middle leadership rather than principals.

F3.2 Early impacts of school-led professional learning decisions

Recent shifts in professional development may benefit individual schools but make it harder to focus resources on clear system priorities

In the immediate years after the introduction of the New Zealand Curriculum, many schools reported focused support from the Ministry for professional learning on the key competencies.¹²¹

Up until 2009 there was a ton of PD on the front end of the curriculum, and then it just all seemed to go away.

The most commonly cited reason for the shift was a tremendous amount of systemic energy spent on implementing National Standards, which some interviewees believed diverted attention away from secondary schools even though those standards were not implemented at that level; in fact, centrally funded professional learning efforts continued at relatively constant levels throughout the implementation of National Standards. Still, one regional office representative noted that on the implementation front, supporting National Standards demanded significant effort relative to work with secondary schools:¹²²

We spent so much of our time with schools out here working on and justifying National Standards, and now they're gone.

At the current moment, determining the professional learning focus and applying for support is the prerogative of individual schools, a relatively recent shift – schools put together professional learning proposals identifying their needs and local panels meet and consider proposals each term.¹²³

The shift to having schools apply for professional development is a good effort at getting schools the services that they value, and offers a promising approach to eliminating wasteful spending. In addition, the shift allows for schools to support collaborative inquiry at a local level in order to identify and needs and develop professional learning programs to support them. But at the moment two issues seem to have surfaced:

1. Many school leaders reported either not applying for funding, or knowing schools that do not apply for funding, because of the time and effort needed to fill out applications;
2. Some service providers reported burdensome costs of an influx in contracts (moving from ten contracts to more than 100), each with its own evaluation plan, leaving them less time to focus on the work with clients and unable to forecast staffing levels necessary to support new work.

As one principal explained:¹²⁴

The system is working out for us, we applied to the national pool and got to pick from accredited providers. But I know a lot of people who just haven't wanted to bother with the paperwork.

¹²⁰ Anderson, C. (2009), p. 12

¹²¹ Author interview. 22 May 2018

¹²² Author interview. 27 March 2018.

¹²³ *What has changed?* (n.d.) Ministry of Education

¹²⁴ Author interview. 17 May 2018

For those schools not engaged with centralised professional learning opportunities, there is risk that instructional practice will remain stagnant. One service provider expressed a desire for the MoE to take a more active role in supporting instructional change in schools:¹²⁵

When the New Zealand Curriculum came out, people had trouble coping. It basically said 'We give you the frame, you develop your curriculum.' Well people went straight back to traditional subject-oriented teaching, because that's just what they're comfortable with and they didn't have a ton of support... schools were just left to sink or swim.

As the new professional learning system takes root, it will be important to monitor not just what types of professional learning schools are requesting, but which schools are not applying for funds, and why; there is some risk that certain schools may simply tread water with current practices if they do not engage with the new professional learning process.

¹²⁵ Author interview. 29 May 2018

Finding Set 4: Coherence in the education sector

Multiple organisations exert policy pressures that influence how deeply schools support the key competencies

Any consideration of classroom strategies deployed by teachers must take into account the policy environment in which those teachers operate. The practice of teaching occurs against a complex backdrop of policies and priorities determined by parents, principals, boards of trustees, universities, government agencies, and service providers.

- The Treaty of Waitangi provides a founding set of principles that mean a diverse set of perspectives inform educational policy and practice in New Zealand schools. This includes reflection on what types of knowledge and skills are valued and developed among students, including balancing western perspectives with Māori and Pasifika viewpoints (see Appendix 1 for discussion of these issues in greater detail).
- Secondary schools function with guidance from the Ministry of Education, the New Zealand Qualifications Authority (NZQA), the Education Review Office (ERO), the Education Council, and individual school boards of trustees made up mainly of parents. School actions and priorities are responsive to each of these organisational bodies.
- The National Curriculum, whether in English or te reo Māori, serves as a framework that schools use to guide local curriculum development, but in practice at secondary schools the NCEA qualifications system drives many of the pedagogical choices of Year 11-13 teachers. Most teachers feel NCEA pressure more acutely than almost any other priority in the system as NCEA credentials are valued by parents, reported in the media and reviewed by ERO and the Ministry.

All in all, for any deep rooted instructional change to take place in the sector, a diverse array of actors and structural features like assessments must be coordinated and aligned.

The Government is currently engaged in trying to do just that through a series of reviews. For example, one of those reviews focuses on strategies for reducing the administrative workload of both teachers and principals – work that responds to an ERO report that noted:^{126 127}

There is a range of administrative work associated with (secondary) teaching, leadership and pastoral care, including reporting, meetings, data collection, management and analysis, surveys, parent contact, health and safety, organising relief, photocopying, NCEA administration tasks (e.g. record keeping, data analysis), appraisal and registration requirements, special education applications, IT management and support... These [tasks] are often delegated from the principal to senior leaders to departments and middle leaders and teachers.

Coordinating the details of this work remains a challenge for schools, and while the 2018 reviews continue, many schools engage in status quo practices until further direction is provided; that is, most school leaders interviewed approached the 2018 school year with a continuation of existing practices while aware that the current set of reviews may provide new policies or implementation priorities at the secondary level.

F4.1 The many actors and factors involved in key competencies

Multiple organisations operate key levers that impact a focus on the key competencies

¹²⁶ Collins, S. (2018b). *New Zealand Herald*. 6 May 2018

¹²⁷ Wastney, M. (2018). *Education Review*. 14 February 2018.

In practice, principals work in an environment where multiple organisations set standards and policy frameworks. New teachers are hired out of university programs whose courses are approved by the Education Council; teacher appraisals for existing teachers are also completed in accordance with standards set by the Education Council. Those teachers build courses in secondary schools based in part on individual standards written by the New Zealand Qualifications Authority (NZQA). Guidelines for assessing performance against those standards are set by the NZQA, which builds and administers external exams (i.e. three-hour, year-end tests). Those standards and exams are aligned with New Zealand's National Curriculum (the New Zealand Curriculum and *Te Marautanga o Aotearoa*) with stewardship from the Ministry of Education (MoE). And the Education Review Office (ERO) then evaluates the whole school picture – support and planning processes for teachers, equity in student outcomes and strategies for priority learners, and engagement with communities. The principal, hired by a board of trustees consisting mainly of locally elected parents, works with that board to reflect on overall performance and determine the strategic direction of the school.

Schools manage teacher appraisals with standards from the Education Council, educate students on standards written by NZQA, implement a curriculum stewarded by the MoE and undergo evaluation led by ERO

Each of these organisational bodies, independently managed, provide crucial direction for teacher practice such as the integration of key competencies into instruction and assessment. And when teachers and school leaders fail to see coherence across the range of actors that manage the system, they simply choose their own pathways to follow.

A former principal and NZQA official suggested that measurement became the primary reason that secondary teachers tended to overlook the key competencies early after their introduction through the New Zealand Curriculum: secondary teachers wanted to know whether and how to report on the competencies, and a lack of clarity caused many to overlook them altogether:¹²⁸

For many teachers (but not all), particularly in Years 11-13, [the key competencies] are simply not regarded as being as important as the achievement objectives, because it is the achievement objectives, from which the achievement standards are derived, that are the key building blocks of the NCEA qualification... the writers of the curriculum failed to recognise that assessment for qualifications through the NCEA requires a view of assessment that is quite different from that implied (though not very clearly) in the monitoring of competencies.

During interviews, some teachers I met with expressed scepticism that the institutions set up to support them were designed to support the development of key competencies. One such example came through reflection on building interdisciplinary courses, where a teacher presented a dilemma she perceived with the moderation of NCEA standards in those courses:¹²⁹

NCEA standards are pitched as flexible, but the structures behind them aren't. I think the moderators work in siloes. So if we have an interdisciplinary course with student work in math and social studies, does that go to a math or social studies moderator? I'm really not sure.

Overall, the impact of a vast set of NCEA credits on schools' approach to supporting the key competencies cannot be understated. When interviewees spoke of narrowing their curriculum or having to cover too much content, they often alluded to the pressure they felt to grant NCEA credits at high pass rates – given that NCEA pass rates serve as a school quality signal to many parents, some schools reported making the rational choice to boost NCEA pass rates in order to appease boards and stand out in media reports. As one principal explained:¹³⁰

Our pass rates were near 90 per cent and our board wanted to know why we were lower than some neighbouring schools. I said 'You want 92 per cent?' I can get that with NCEA, we'd just have to do a couple things here and there. But that's not the purpose of schooling.

Additionally, many school leaders and teachers feel the performance of their students on NCEA examinations is the primary measure by which the Ministry of Education judges their school's

¹²⁸ Haque, B. (2014) p. 127-128

¹²⁹ Author interview. 31 May 2018

¹³⁰ Author interview. 21 May 2018

performance. A teacher commented on the pressure to maintain momentum with NCEA credit accumulation throughout the year:¹³¹

Our principal is checking NCEA progress all the time because the Ministry is checking NCEA progress. If you're not showing it, you're getting an email from him.

A principal at a different school under heavy pressure to improve his school's NCEA standing noted the pressure created by external evaluation:¹³²

There's the front end of the curriculum, which we're trying to bring into learning. And then there's the back end, which is how you get judged as a school, around NCEA Level 2. And I think that game is a small game, it's a narrow game.

For many teachers and principals, NCEA performance becomes the top priority, which carries two implications. First, if teachers do not see how the key competencies help students learn more effectively, they may simply ignore them. Second, when teachers and school leaders perceive that NCEA pass rates are the primary means by which their work and that of their school is judged, they devote a large share of their efforts towards preparing students for NCEA exams.

F4.2 School holding patterns during the reviews of 2018

In the current year, schools, service providers, and regional offices are holding their course while reviews are undertaken

As of July 2018, the New Zealand Government had commenced a wide conversation on education including 13 specific reviews (e.g. establishing an independent task force to examine the fundamental structure of self-managing schools in New Zealand).¹³³ The Ministry of Education is supporting the government's work programme to undertake these reviews, while also continuing to implement 19 initiatives and 6 major strategies which remain as stated priorities.^{134 135}

This programme is organised around five main objectives:¹³⁶

1. Placing learners at the centre
2. Barrier-free access
3. Quality teaching
4. Quality inclusive public education
5. 21st Century learning

The Government's review programme aims to involve all education system participants (including students, parents, employers, and communities) in a more collaborative way, starting with a series of two education summits in May which began a broad system-level strategic conversation about the value of education and the future challenges and opportunities in the education system.¹³⁷ This Education Conversation represents good faith efforts to engage with the education sector and provide support on matters of critical importance. The Government has established a wide range of opportunities for the education profession to input into the conversation and the detail of each component of its work programme. Accordingly, some principals interviewed for this report expressed appreciation that a holistic view of the sector was being undertaken; however, others expressed the view the work of schooling continues regardless of the perceived vicissitudes of government. A service provider summed up this sentiment:¹³⁸

¹³¹ Author interview. 31 May 2018

¹³² Author Interview 28 May 2018.

¹³³ Collins, S. (2018c) *New Zealand Herald*, 10 June 2018

¹³⁴ *Overall strategies and policies* (2018), Ministry of Education

¹³⁵ *Specific Initiatives* (2018), Ministry of Education

¹³⁶ *Education portfolio work programme: Purpose, Objectives and Overview* (2018)

¹³⁷ *Ibid; Kōrero Mātauranga: let's talk about education* (2018)

¹³⁸ Author interview. 14 June 2018

We find that no-one in the system has a really good handle on what everyone else is working on or doing, even those inside the Ministry regarding each other's work or those across the core education agencies. Initiatives...happen all the time but how it all links up and what the overall strategy is remains very unclear. In the meantime, schools just get on with it, pulling together piecemeal resources and system direction the best they can.

Two additional perceptions from schools are worthy of consideration. First, one of the schools I visited located outside of a major urban centre expressed scepticism that its voice is heard as prominently as schools working with students from high decile communities. A teacher commented:¹³⁹

What schools' voices are being heard during the current reviews? It's Auckland schools and a bunch of other high decile schools. It's not us low-decile schools.

Second, some schools expressed scepticism that during consultation periods on proposals coming out of ministerial working groups that feedback is truly taken into account. A principal noted:¹⁴⁰

I'm not sure I trust the process of consultation [on the current NCEA review]. Typically proposals... turn out to be slow-drying concrete.

¹³⁹ Author Interview 31 May 2018

¹⁴⁰ Author interview 25 June 2018

III. RECOMMENDATIONS

The recommendations in this section are meant to be considered as a range of actions that the Government, Ministry of Education, schools, and other agencies in the sector can take to support teaching emphasis on the key competencies in secondary schools. Recommendations are grouped within a values-knowledge-capacity-coherence framework. Detailed discussion of each recommendation can be found in the sections that follow, and the concluding section of the paper presents a framework for prioritizing them.

Specific recommendations include:

- 1) **Values** – Overall, signal that the education system values the development of key competencies alongside academic success
 - a) Expand data analysis that can offer insight into the key competencies by encouraging schools to utilize surveys to capture a broad set of outcomes; analyse existing data within the system to understand the holistic impact schools have on learners; and review existing school reporting structures and practices to understand how schools conceptualize success
 - b) Utilize digital technologies to improve the frequency and variety of information flows with parents
- 2) **Knowledge** – Help stakeholders within the system build deep knowledge of how the key competencies impact learning
 - a) Offer micro-credentials for teachers that tie social and emotional learning to development of the key competencies
 - b) Ensure professional learning on key competencies is provided within disciplines as much as it is provided across disciplines
 - c) Pilot project-based learning credits and evaluate the impact of project experiences before a decision is made about whether to require these credits across the system
 - d) Target social and emotional learning programming options for students at ages 13-15, and tie the lessons of these efforts to the key competencies in order to ensure they support all students
- 3) **Capacity** – Ensure that leaders within schools have the time and training to support instructional change
 - a) Ensure teacher collaboration time is maximised within current timetables, and that collaboration supports concrete strategies grounded in sound inquiry processes
 - b) Invest in middle leader training through Ministry regional offices or service providers
 - c) Use digital technologies strategically to support differentiation and feedback for students
 - d) Field test instructional resources that support development of the key competencies
 - e) Develop a New Zealand research base on the impact of structures that prioritize teacher-student relationships
- 4) **Coherence** – Ensure that the mix of agencies and policies that impact schools' priorities work in tandem to support the key competencies
 - a) Streamline professional standards so that appraisal processes involve reflection on the implementation of the New Zealand Curriculum
 - b) Broaden the Record of Achievement from a list of credits to a portfolio of learning experiences and achievements
 - c) Provide a database or toolkit that allows school leaders and teachers to prioritize standards that support development of the key competencies
 - d) Ensure evaluation of internal processes drives review cycles to prevent an overreliance on NCEA achievement levels
 - e) Incentivise employers, community organisations, and/or universities to collaborate with secondary schools at scale
 - f) Work with universities to ensure required credits contribute to a secondary school experience consistent with the New Zealand Curriculum's overall vision and principles

Recommendation Set 1: Valuing the key competencies

In analysing teacher surveys and conducting visits to school sites, I found that teachers generally value the key competencies as a set of capabilities students ought to possess. Whether they built learning experiences to develop those capabilities was another question, however: many teachers felt that since there were no agreed upon ways to monitor or measure the key competencies, time and effort spent trying to determine how students' capabilities developed would be time lost and effort wasted.

The recommendations in this section provide a set of actions that various actors can take in order to signal the value the system places on the development of key competencies; those efforts should also lead to improved ways of thinking about monitoring and reflecting on the skills students build through emphasis on the key competencies.

R1.1 Expand analysis to gauge how key competencies are monitored

Expand data analysis that can offer insights into social and emotional skills that underlie the key competencies, but do so carefully

Many educators feel that the key competencies are simply not valued in the current system. This feeling stems in part from the concern that academic achievement is the number one driver of how schools are evaluated by entities such as the MoE and ERO as well as parents.

There is compelling evidence that social and emotional skills predict a number of outcomes, from course grades to long-term health (see correlations in Figures 8-10 in Section I). While the causal mechanisms underlying these relationships are still the subject of much research, it follows that measuring social and emotional skills can provide a more holistic approach to understanding the preparedness of students for academic work as well as life beyond school. The key competencies emphasise many of these skills either explicitly or indirectly, such as resilience, self-concept, extraversion, and conscientiousness.¹⁴¹ However, how to measure those outcomes is a question of considerable debate.

Use student surveys on SEL skills cautiously

Student surveys may offer some useful data within schools, but it is too early to use them to compare impact across schools

There are several methods to pursue to understand how the key competencies develop among students, the first of which might be self-reported measures of social and emotional skills. For example, a group of school districts in California known as the “CORE” districts recently began measuring students' perceptions of their growth mindset, self-efficacy, self-management, and social awareness to determine how each develop between Grades 4 and 12. Researchers gave the following rationale for the work:¹⁴²

A clearer understanding of how students' social-emotional skills develop, including how specific competencies shift with age and vary across subgroups, should help educators, policymakers, and researchers to interpret patterns they observe in their students and discern how best to support them.

One of the major limitations of the work, however, lies in both the possibility that students select answers they feel are the most “correct” (“social desirability bias”) as well as in “reference bias” – the danger that individual responses are skewed by different standards of comparison.¹⁴³ For example, one study on self-reported student measures of conscientiousness, self-control, grit, and growth mindset indicated that while these measures are correlated with positive outcomes for individual students overall, when aggregated by school level those effects dissipate.¹⁴⁴ One explanation offered is that students at schools that focus on SEL tend to rate themselves lower than students at schools that do not – these schools may

¹⁴¹ *The New Zealand Curriculum* (2007), p. 12

¹⁴² West, M., Fricke, H. and Pier, L. (2018)

¹⁴³ West, M. and others (2015) p. 6

¹⁴⁴ West, M. and others (2015)

therefore have the positive effect of raising the standards and awareness of social and emotional skills, but their data show their students scoring themselves lower than other students on those very skills.¹⁴⁵

In New Zealand, ten schools recently participated in a pilot to assess SEL among students. The schools worked with the Auckland-based 21C Skills Lab, which facilitated a pilot with the online test known as ACT-Tessera, developed by researchers in the United States.¹⁴⁶ I spoke to three educators involved in the work, and opinions of the utility of the testing service and resources varied. One deputy principal found the data helpful for confirming general opinions the leadership team had formed about student dispositions:¹⁴⁷

All of our Year 9 and 10 students took the test, and teamwork and resilience showed up as being weaknesses among our students. This matched with our anecdotal evidence, and it was nice to have some data to confirm our observations. Many of our students are used to working on their own.

On the other hand, another leader found the testing experience to be overwhelming and thus the data to be unreliable. In his opinion, the value in participating in the pilot came from a guide of action steps used to develop social and emotional learning:¹⁴⁸

When my kids sat down to do the initial assessment, they balked at 1.5 hours of multi-choice questions... [but] there was some really cool, practical stuff in the playbook that came along with the assessment that helped us build our lesson plans that we deliver as part of pieces of our graduate profile.

Experiences among New Zealand and American schools, and work from well-known researchers such as Angela Duckworth (known for studying “grit”), suggest that overall there is a compelling rationale for schools to use self-report data to gauge student strengths and weaknesses in social and emotional skills:

Survey data on social and emotional skills can provide insights at the student or classroom level but are still largely unreliable in comparisons across schools

this type of data could be used to inform teacher planning of learning experiences that emphasise the development of key competencies, and boards of trustees might find the data useful to reflect on areas where students feel confident as well as those in which they need support. But overall, data on social and emotional skills still appears too unreliable to use in comparison across schools – reference bias would skew any efforts at valid comparison. Thus if the Ministry of Education were to promote the use of survey tools with schools or Kāhui Ako, the results of that data ought to be used in concert with leaders within schools, but not as comparison metrics across them.

Determine existing data that may serve as a proxy for key competencies

Collating existing data within the education system might provide helpful indicators on the true impact teachers have on student outcomes within and beyond school

A potentially more valid approach to data collection than self-report surveys might be to construct a proxy for a high level of social and emotional skills based on data that is already collected in the education system—this could include attendance data, NCEA achievement scores (from Not Achieved to Excellence), stand-down data, and extracurricular involvement. ERO reports currently mention checking data for attendance and stand-downs and often explicitly call out overall NCEA achievement rates – sophisticated analysis could help determine the extent to which these metrics predict future outcomes, and which teachers are most effective at influencing them.

This type of research has been undertaken in academic settings in the United States: for example, a 2012 study of high school students analysed both test scores and a construct consisting of attendance, suspensions, course marks, and on-time progression across grade levels to serve as a proxy for what the paper termed “non-cognitive skills.” The author, an economist from Northwestern University, theorised that while tests capture cognitive skills, coming to school and working to maintain performance requires persistence, motivation and planning – all associated with social and emotional skills. His construct of attendance and grades was found to be a better predictor than test scores on whether students would

¹⁴⁵ Ibid, p. 25

¹⁴⁶ ACT, Inc. (2018)

¹⁴⁷ Author Interview. 22 May 2018

¹⁴⁸ Author Interview. 28 June 2018

graduate from high school, choose to attend college, earn high wages, or encounter the criminal justice system.¹⁴⁹

Interestingly, data also showed that some teachers were able to effectively improve students' test scores, while others had a greater impact on whether students consistently showed up to school, stayed out of trouble, moved onto the next grade with their peers, and got good grades across learning areas. Perhaps most notably, the teachers who excelled at raising test scores and those with a large impact on non-test score outcomes were different people, suggesting teachers excelled in one area or the other, but not both. The study concluded:¹⁵⁰

Test score measures understate the effect of teachers on adult outcomes in general, and may greatly understate their importance in affecting outcomes that are determined by non-cognitive skills.

Some evidence suggests that certain teachers greatly improve student test scores, while other teachers impact proxy measures for social and emotional skills that predict important adult outcomes

Exploring existing data on a variety of academic and non-academic student measures might help identify and celebrate schools that make a contribution to the holistic development of students—including proxy measures for “Managing Self” and “Relating to Others” that could be constructed from existing data sources. Data available in StatsNZ’s Integrated Data Infrastructure (IDI) contains a range of microdata ripe for exploration, and analysis of education figures along with health, justice, community and/or employment data could all lead to deeper understandings of the true impact of educators on student outcomes over time.¹⁵¹ Tying this type of analysis back to school-level decision-making around programming and teacher practices, however, will require a collaborative effort between statisticians and education researchers unlikely to be realised in the short run.

Understand current school reporting structures and practices

Individual schools are already making decisions about what data to report to parents and using technology tools to broaden reporting; understanding what these reports look like and what strategies are in use offers an area for further study

In 2015, just under one-third of secondary school principals included targets to “build students’ social and emotional competencies and well-being” into their annual plans (comparison with 2012 was not possible as this reporting was not available on that survey).¹⁵² This indicates that some schools are already developing metrics by which to gauge social and emotional skills development, but by and large the majority are not.

On individual student reports, however, most schools I visited included comments or narrative descriptions of social and emotional factors. Across those schools, reporting measures varied tremendously. At one point a secondary school was issuing scores for student levels of “grit” on official reports; they had recently shifted to offering credits and reporting on collaboration and communication, something stakeholders indicated they valued even as they recognised difficulties in reporting on such measures:¹⁵³

We just felt like we need to give feedback on competencies in order to help students grow in those areas, and aligning as a staff was the best way for us to think about doing that. – Principal

Something like speaking up in class counts for your communication grade, and speaking up feels like it’s important in life, so I appreciate that we get credit for it. – Student

As for how we come up with marks, even I have to look at our reports to figure out what they mean and I work here. I just tell my husband to look at the comments because that’s what’s most important. – Teacher

More commonly, schools made strategic decisions around the presentation of reports to students, placing commentary on an individual student’s character qualities on the front page. I observed this both with a low decile school in South Auckland and a high decile private school in the Wellington region, indicating

¹⁴⁹ Tough (2016)

¹⁵⁰ Jackson (2012)

¹⁵¹ StatsNZ (2018)

¹⁵² Wylie, C. and Bonne, L. (2015), p. 54

¹⁵³ Author interview. 26 March 2018

the high degree of interest in understanding and valuing the whole child across both economic and cultural lines. As one of the schools noted:¹⁵⁴

We place our valued concepts on the front of a report because if this is what we value we need to put these front and centre and not just lead with academic data. If we show parents academic data first then they focus mainly on that. So our character reporting goes on the front page on every report.

Further research should be done to understand what schools report on, how they do so, and what the impact is on student engagement, parent engagement, and academic achievement. Schools indicate a desire to report on social and emotional factors at the individual level, but few had strategies to roll up this data for analysis or planning at the school level. MoE could work with ERO, NZCER, or university researchers to better understand the following, and use results to inform future practice:

- How do schools report to parents and whānau on the social and emotional skills found within the key competencies?
- What factors determine the skills and dispositions that schools choose to highlight in reports?
- Does the structure of reporting influence how teachers teach, or what they decide to teach?
- Beyond sending reports home, what strategies do schools use to reflect and report on students' learning?

On the last point, many schools I visited exhibited promising practices to go alongside reporting, such as student-led conferences with parents. For example, after the principal read an article in the *Education Gazette*, a comprehensive school I visited decided to host “My Action Plan” meetings with students and parents twice per year. The meetings helped broaden conversations about developing successful students and led to significantly increased parent engagement.¹⁵⁵

Our traditional back to school night was getting 30 per cent parent involvement. Now we're seeing 85 per cent involvement when we block off a full day for one-on-one meetings.

Alongside reporting practices that deliver insights into the key competencies, several schools visited used student-led conferencing to allow students to gain experience discussing their strengths, needs and interests

Research on principals' views of the support received from various agencies offers some possible guidelines for which agency or organisation might conduct a study and offer recommendations. Data from 2015 show that among government agencies, secondary principals rank NZQA (79 per cent), MoE regional offices (73 per cent), ERO (53 per cent), the MoE national office (40 per cent), and the Teachers Council (33 per cent) as most helpful in providing advice (see Figure 16).¹⁵⁶ Among “other organisations”, the New Zealand School Trustees Association (NZSTA-73 per cent), Secondary Principals Association (SPANZ-71 per cent), NZCER (56 per cent), and the PPTA (48 per cent) have all provided guidance to principals with varying degrees of reception.¹⁵⁷

From these metrics, it appears MoE regional offices or NZSTA might be best equipped to dig into how schools report success and offer recommendations. In particular, engaging NZSTA might offer an opportunity for boards of trustees to consider how schools collect data that reflects a holistic picture of student success, which could offer the additional benefit of broadening the expectations of parents from a myopic focus on NCEA success rates to a more comprehensive set of outcomes.

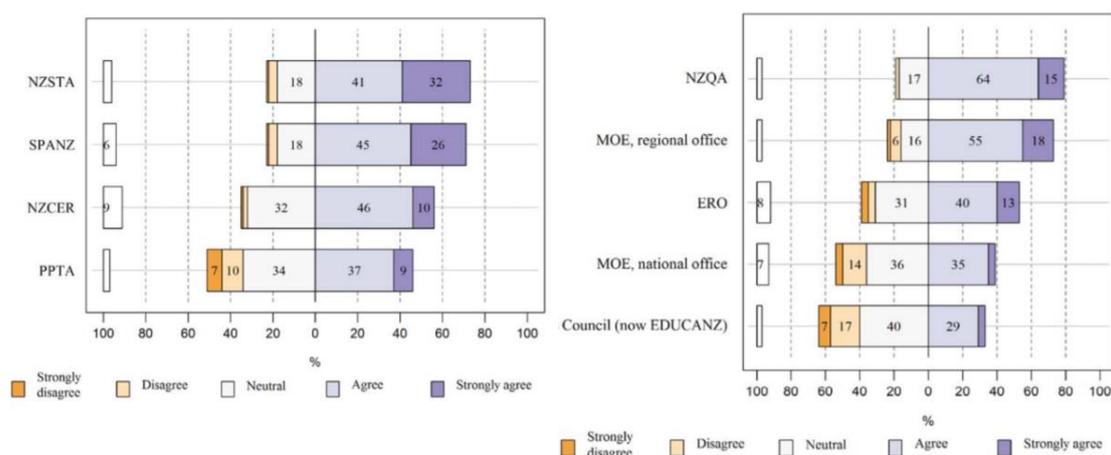
¹⁵⁴ Author Interview. 28 June 2018.

¹⁵⁵ Author interview. 17 May 2018

¹⁵⁶ Wylie, C. and Bonne, L. (2015), p. 145

¹⁵⁷ Ibid.

Figure 16: Secondary principals' views of helpfulness of advice from various agencies



R1.2 Improve information flows to parents

Utilise digital technologies to improve information flows with parents

While teachers can have an impact on social and emotional skills, parents also influence aspects of the key competencies. An Education Council convening recently noted the unique influence parents can play in directing focus to the key competencies:¹⁵⁸

There is a need for parent and whānau education about future work and skills alongside the profession's curriculum and qualification discussions. Parents and whānau have expectations about what a successful educational outcome is, largely based on their own experiences with education.

Reflecting this reality, several schools I visited for made concerted efforts to engage both students and parents in conferencing as a method of emphasising social and emotional skills development among students. One school noted:¹⁵⁹

Our traditional back-to-school night was getting 30 per cent parent involvement. Now we're seeing 85 per cent involvement when we block off a full day for one-on-one meetings. Twice a year, six weeks into the term, we set goals for the year with students and parents. The form teacher has access to all kinds of online data to write up a report for that meeting.

Another school had students rate themselves on learner qualities, several based on the key competencies, in order to lead conversations with parents:¹⁶⁰

Kids self-assess on a continuum from one to ten for each of our qualities, but it's really about growth rather than having standard levels. So progress is based on student perception and supported by teachers. We have student conferences three times per year. Kids place themselves on a continuum, and they'll talk about what the quality of being a "risk-taker" means at school and then parents will chime in with how they see that playing out at home. The kids set goals for two concepts per term for their action plans.

Beyond in-depth conferencing, some research conducted at scale suggests that engaging parents with technology-based notifications offers promising results. A 2017 review of randomised, controlled trials identified 10 studies that sought to improve the information flow from schools to parents, finding benefits such as improved academic performance and attendance and reduced behavioural issues:¹⁶¹

¹⁵⁸ Education Council symposium (2018)

¹⁵⁹ Author interview. 20 May 2018.

¹⁶⁰ Author interview. 28 June 2018.

¹⁶¹ Escueta, M., Quan, V., Nickow, A.J. and Oreopoulous, P. (2017), p. 44

These programs followed two main approaches: first, sending information to parents that was generated anyway as part of regular school activities (like grades and attendance), and, second, having teachers send personalised messages to parents. Overall, these studies have found positive results, indicating a potentially fruitful set of opportunities.

The theory behind why these interventions work is simple – the more information parents have about their child’s time at school, the more likely they are to work with the child to address challenges:¹⁶²

If parents are constrained by a gap in information on how hard their children are working or how well they are performing, and if children are not already expending maximum effort, then closing these gaps may provide parents the opportunity to apply that alchemical combination of guidance, pressure, and support that constitutes parenting. This issue may be especially important for low-performing schools, which already exhibit lower rates of communication satisfaction from parents and where parents may be relatively more constrained in their ability to absorb monitoring costs.

Some evidence suggests that engaging parents with technology-based notifications allows them to play a more informed role as mentors and guides for students

At the primary level, I observed several schools using apps like SeeSaw, which allows teachers to snap quick photos or videos of student work or performance, and pushes that learning evidence as notifications to parents. Several parents remarked that this enabled them to ask better questions of students about their work and experiences at school.¹⁶³ One secondary principal remarked that a similar app for employers would allow him to gain a better handle on what students were learning through Gateway or project-based experiences, which can be difficult to coordinate.¹⁶⁴ At the secondary level, however, data pushed to parents still appears grounded in descriptive figures. For example, the MoE currently supports messaging systems that notify parents of absences.¹⁶⁵

Gathering and analysing data such as attendance in greater depth might support teachers in identifying root causes of student performance; for example, some attendance apps tabulate the number of instructional minutes that students miss in a given class in a given term.¹⁶⁶ One can imagine using this type of data in student-led conferences to demonstrate that performance in a course is influenced by both academic and non-academic factors.

Going forward, as part of its annual analysis of attendance data, the MoE survey of attendance could compare attendance levels of schools that use messaging systems and those that do not, controlling for factors like decile level, in order to study the impact of messaging systems in New Zealand communities.

Of course, technology interventions need to be sensitive to conditions in local communities. A 2017 report identified the following groups as likely to experience some forms of “digital exclusion”, meaning they may not have the access or skills to access the internet:¹⁶⁷

- Families with children in low socio-economic communities
- People living in rural communities
- People with disabilities
- Migrants and refugees with English as a second language
- Māori and Pasifika youth
- Offenders and ex-offenders
- Seniors

Yet on the whole, secondary schools may find interventions that seek to address attendance issues particularly salient, especially among female students. In 2016 data showed that attendance begins to dip around Year 11 for both genders, but by Year 13 male students attend school at a rate almost 6.5 per cent higher than female students (49.9 per cent to 43.5 per cent, respectively, Figure 17).¹⁶⁸

¹⁶² Ibid.

¹⁶³ Author interviews, various dates.

¹⁶⁴ Author interview. 15 May 2018.

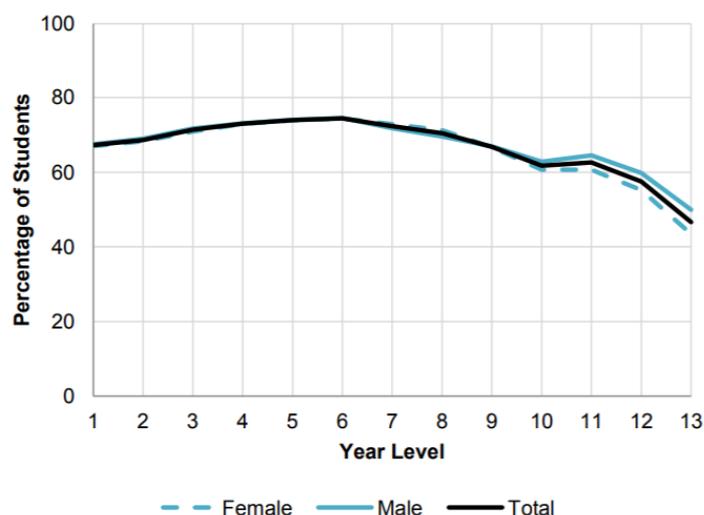
¹⁶⁵ *Early notification – messages about absences* (2018), Ministry of Education

¹⁶⁶ Singer, N. (2016)

¹⁶⁷ Digital Inclusion Research Group (2017)

¹⁶⁸ Ministry of Education (2016), p. 8

Figure 17: Students attending school regularly (present 90 per cent of days or more), Term 2, 2016 ¹⁶⁹



And schools that have systems to flag attendance issues might ward off disengagement in secondary schools at critical time periods. A 2016 study of students in alternative education programs noted that many attended schools that took action only after long periods of truancy were identified:¹⁷⁰

When students chose to use the only option they had any control over (wagging), there did not appear to be effective systems to intervene quickly before it became a pattern... Students in our study, disengaged from learning first and then wagged. The schools (apart from one clear example in our study) reportedly failed to notice, or they noticed but did nothing to prevent the disengagement, and they only picked up on the presence problem after extended truancy

The same study identified that part of the reason students disengaged from school was a gap in skills required for secondary school courses – an issue that was also cited by secondary teachers interviewed for this study as a reason not to focus classroom time on key competencies (and an issue addressed with Recommendation R3.3 on digital technologies).

Truancy may stem from a lack of academic skills as well as social and emotional factors like resilience and conscientiousness

On the whole, the MoE has some promising practices in place to engage parents in student data in an automated fashion, such as the aforementioned absence notification partnerships.¹⁷¹ Evidence suggests that these efforts to boost information flows to parents should be continued, while new tools that might deepen the quality or variety of information sent to parents could be of particular use to classroom teachers. As parents and whānau become more aware of student learning within schools, they may be able to take a more informed role in guiding learning outside of school, supporting students on social and emotional skills that pervade both settings.

¹⁶⁹ Ibid.

¹⁷⁰ Brooking, K., Gardiner, B. and Calvert, S. (2009), p. 50

¹⁷¹ *Early notification – messages about absences* (2018), Ministry of Education

Recommendation Set 2: Knowledge-building for key competencies

In a 2013 paper on the evaluation and reward of teachers, scholars from Massey University discussed the importance of knowledge-building in educational change efforts:¹⁷²

A recurring reason for school reform failures is 'because they assumed that teachers would know how to do things they actually didn't know how to do'... To acquire a new skill it is necessary to engage in active rehearsal of that skill with feedback (provided, for example, by another teacher) and to continue the practice-feedback cycle until the new skill has been mastered.

This perspective is useful in consideration of the key competencies – as findings in this paper suggest, while schools value the key competencies as an important part of student growth, many secondary teachers have yet to incorporate them into practice as foundational elements of learning. The recommendations in this section offer a set of strategies to further understanding of how the key competencies impact day-to-day teacher practice.

R2.1 Offer SEL micro-credentials for teachers

Offer micro-credentials for teachers in social and emotional learning concepts that underlie the key competencies

Interviews for this study suggest many teachers crave a set of tools to go along with the key competencies. These tools could be delivered within micro-credentials that teachers could pursue in order to further their understanding of the key competencies. Micro-credentials could certify knowledge of critical aspects of learning that help teachers build a schema in SEL constructs that underlie the key competencies.

These could be focused, three-to-five step “investigations” that teachers undertake within or across departments in order to support inquiry-based, collaborative professional learning. Possible topics for micro-credentialing with a key competency lens include the following:

- Thinking: Metacognition as a learning strategy – how planning for and reflecting on learning supports knowledge construction and knowledge transfer
- Managing self: Self-efficacy, grit, and growth mindset – giving feedback and designing learning opportunities that boost student self-efficacy and motivation
- Relating to others: Cooperative learning and group dynamics – how goal-setting influences teams, strategies to use to maximise learning in heterogeneous groups
- Using language, symbols and texts: Working memory, long-term memory, and cognitive load – how disciplinary fluencies underpin critical thinking within and across disciplines
- Participating and contributing: Learning partnerships – engaging whānau in the construction and evaluation of rich tasks

A possible schedule for a micro-credentialing experience could be the following, which may unfold over the course of three to five weeks or at a pace determined by teachers:

- Step 1: View tools and resources on a topic from online learning platform. Evaluate current state of classroom relative to concepts encountered in video
- Step 2: Plan an intervention with colleague(s) to test out strategies learned in Step 1
- Step 3: Implement intervention with students and reflect on impact with colleague(s) and students
- Step 4: Final reflection on feedback and results. Repeat cycle from Steps 2-4 and move on to another module

Over time, teachers might be able to build up a suite of mental models and concrete tactics for supporting the social and emotional aspects of classroom practice critical to learning how to learn. Along the way, some core misconceptions that are held about the key competencies may be challenged (e.g. the idea that

¹⁷² Snook, I. and others (2013), p. 102

time spent on metacognition with struggling students is time wasted – lower-achieving students may actually benefit most from this type of support).¹⁷³

Online content offers flexibility and a low-cost delivery mechanism for new content, and recent research on teacher coaching in the United States suggests that virtual support can be just as effective as face-to-face learning opportunities.¹⁷⁴ But as low completion rates for massive open online courses (MOOC's) show, staying motivated to work independently is a challenge. To incentivise continuous learning, the following actions can be taken:

Recent research suggests that virtual support for teachers can be just as effective as face-to-face learning opportunities

- Schools: Look for opportunities in the timetable to give teachers working on micro-credentials time dedicated to complete work – for example, offload administrative tasks from middle leaders engaged in online courses, or give teachers enrolled in micro-credentials an extra block of time during the week to complete their work during a given term
- Principals/Education Council/PPTA: Take enrolment in online modules into account during the appraisal process, crediting teachers for standards like professional learning
- ERO: Take enrolment in online courses into account in school reports as evidence of a culture of continuous learning

Finally, schools might want to consider pairing newer and more veteran teachers together to engage in collaborative inquiry. Newer teachers might be more up-to-date on the latest research underpinning learning as they finish university, but struggle with anticipating how students develop content knowledge. Veteran teachers typically possess deep content knowledge, but may lack channels to stay abreast of the latest research on learning. Pairing these teachers together to focus on critical social and emotional elements of learning can provide an opportunity for deep, practical inquiry into how to best to support students.

R2.2 Support PLD on the key competencies within disciplines

Ensure the professional learning on key competencies is focused as much within disciplines as it is across disciplines

In NZCER's 2015 survey of secondary school leaders, 20 per cent of principals felt they could not access external expertise to “embed the [New Zealand Curriculum] key competencies in all learning areas.”¹⁷⁵ However, whether that is a goal for many schools is an open question.

Visits to some school sites revealed an undercurrent of dissatisfaction that interpretations of the New Zealand Curriculum have become too progressive and too focused on skills over content essentials. For example, multiple stakeholders spoke of students arriving to secondary schools with lower levels of basic math skills than in the past:

I find that the kids have spent a lot of time in groups and figuring out different solutions but they lack some of the basic math skills they need to be successful in the sciences. – Teacher¹⁷⁶

57 per cent of my incoming kids this year couldn't subtract 58 from 67 on our incoming assessment. They've done a math curriculum in primary school that is too open. – Principal, intermediate school¹⁷⁷

We're seeing a dip in numeracy skills among our students, many of them are coming in 2 years behind where they used to be. That's the result of the Numeracy Project. – Principal, secondary school¹⁷⁸

¹⁷³ Zohar, A. and Ben David, A. (2008)

¹⁷⁴ Kraft, M., Blazar, D. and Hogan, D. (2018), p. 31

¹⁷⁵ Wylie, C. and Bonne, L. (2015), p. 146

¹⁷⁶ Author Interview, 21 March 2018

¹⁷⁷ Author Interview, 27 March 2018

¹⁷⁸ Author Interview, 25 June 2018

Other stakeholders spoke of concerns that they were bearing the burden of working with students on skills on their own time.¹⁷⁹

We were having to spend 30 minutes a night just teaching my daughter her basic multiplication facts because she wasn't learning any of that in school. She has as much freedom in her learning as I did getting my PhD. I just have the sense that maybe we've gone too far with self-directed learning.

Some interviewees with similar concerns directed me to the work of the New Zealand Initiative, or Daisy Christodoulou or Katharine Birbalsingh in the United Kingdom, or E.D. Hirsh in the United States, all of whom have advocated for the primacy of content knowledge in learning.^{180 181 182 183} Beyond my interview experiences, there is some evidence that this type of focus on academic, disciplinary learning is more prominent in high decile New Zealand schools than low decile schools.¹⁸⁴

Both direct instruction and discovery learning methods contribute to student learning, meaning teachers would do well to utilise both approaches when necessary

On the other side of the pedagogical spectrum, some interviewees expressed that the current system is too focused on knowledge and too focused on accepted norms of assessment to effectively support the diverse range of students in New Zealand schools. Many of these educators advocated play or project-based learning; cited Montessori or Steiner methods; spoke of Gardner's multiple intelligences or Moll's funds of knowledge; sought to "build learning power" as advocated by Guy Claxton; and gravitated toward more recent works challenging educational convention from American professor Todd Rose.^{185 186 187 188} Some examples of this type of thinking include:

We're trying to wrap the learning around the student here so they develop an appreciation for learning – Principal, composite school¹⁸⁹

Assessment can blind you to different types of intelligences... my kids don't do standardised assessment very well, their culture is set up around family ties, it's collaborative and communal. When you sit down they like to talk about answers, and that doesn't work well for standardised assessment. – Deputy Principal¹⁹⁰

Where do you draw the line on disciplinary knowledge anyway? Twenty teachers of science will give you 20 different ideas of what students need to know. Instead of just knowledge, we should be teaching competencies. – Service provider¹⁹¹

I think the approach should be this... you immerse yourself in a learning experience. Then you reflect back and say 'OK, which credits can I demonstrate?' So you start with a target of learning, and then you worry about accumulating credits. It's high risk doing it this way, and it puts a lot of demand on the professional. But would doing that be riskier than perpetuating this 'End of Average' approach that we have now? – Service provider¹⁹²

As a study on teaching thinking skills recently discussed, it is likely that both direct instruction and discovery methods contribute to student learning.¹⁹³ Thus there are merits to both educational perspectives, and teachers would do well to be familiar with them. For example, teachers ought to investigate which types of knowledge in a discipline provide students the greatest opportunity to be able to assimilate and make sense of new information. In maths, for instance, research has found that knowledge of fractions and long-division have a relation to future maths achievement greater than that

¹⁷⁹ Author Interview, 26 March 2018

¹⁸⁰ Lipson, B. (2018)

¹⁸¹ Christodoulou (2013)

¹⁸² Barbalsingh (2016)

¹⁸³ Hirsch (1999)

¹⁸⁴ Alcorn, N. and Thrupp, M. (2012)

¹⁸⁵ Gardner (1983). *Frames of Mind: The Theory of Multiple Intelligences*

¹⁸⁶ Moll (1992)

¹⁸⁷ Claxton (2002)

¹⁸⁸ Rose (2015)

¹⁸⁹ Author interview, 28 May 2018

¹⁹⁰ Author interview, 28 June 2018

¹⁹¹ Author interview, 28 May 2018

¹⁹² Author interview, 28 May 2018

¹⁹³ Zohar, A. and Ben David, A. (2008)

of whole number operations, working memory, verbal IQ, and parent income and education.¹⁹⁴ That finding can provide grounding for inquiry into some of the maths issues teachers and principals were quick to report in interviews for this study.

However, teachers quick to teach content, assess, and then move onto the next topic in fixed progressions might also want to consider how the depth of learning might increase if students are asked to consider applications of new knowledge or engage community members in shaping that knowledge. One teacher gave an example of a simple strategy she used to teach lessons on volume – students had to design a structure, calculate volume, and then get feedback from local community members on how their structure would work in the real world:¹⁹⁵

One kid went to a chocolatier, another to someone who prepares hāngī, and another to their dad who was a plasterer. The student working on the hāngī said, 'I'm gonna ask someone about the dimensions of the pit depending on group size, whether it's 40-50 people, etc.' Their work just got so much richer with that simple request for feedback, they were thinking of all kinds of things they hadn't before, and they engaged whānau and community members in the process.

That simple exercise allows students to connect learning to prior knowledge, solicit and respond to feedback, and enter into a learning relationship with community or whānau members, all of which ought to both deepen content knowledge and support several aspects of the key competencies; it is consistent with the idea of “interactive homework”, which has some evidence in raising student achievement.¹⁹⁶

A simple strategy such as asking students to get feedback on their homework can deepen learning opportunities and provide experience with the key competencies

The teacher made sure students had grasped the concept of volume and practiced it before going into communities, demonstrating awareness on two levels. First, that novice learners and those with expertise may view the structure of problems differently, with the former requiring more scaffolding and concrete examples to make sense of problem structures.¹⁹⁷ Second, that asking students to transfer the deep structure of a problem from one context to another can further learning.¹⁹⁸

These are concepts that could hold true for professional learning as much as in learning with students, particularly at the secondary level, where the predominant organisational structure for teachers to discuss pedagogy still occurs within domain specific learning areas:¹⁹⁹

The dominant philosophy of the current PD model is to deliver generic messages about good teaching through a variety of non-subject specialist (facilitators, consultants, etc.) and then expect specialist teachers to translate this into action in their classrooms...the core generic messages should be articulated and demonstrated in subject-based PD. This is real, it is immediate, it is not fuzzy, it cannot be dismissed as theory, and it is very much focused on helping teachers to deliver their subject-based lessons.

That perspective speaks to the importance of grounding the key competencies as fundamental for learning within disciplines even as they are framed as essential for learning across disciplines. Transferring knowledge about the key competencies from one subject to another may be challenging for some teachers, and understanding how the key competencies underpin learning in their content areas is likely to boost transferability to other learning areas in the long run.

Subject-specific professional learning of this type would likely be well-supported by secondary teachers – a 2014 survey with 3,673 responses revealed “subject specific” PLD as the most selected choice for centrally funded PLD from a list of 22 topics.²⁰⁰

Logistically, subject-specific professional learning is challenging – sending one facilitator to work with a school is much more cost effective and realistic than sending eight facilitators for eight learning areas. Here technology can play a role: a single facilitator could provide the general framing for professional learning, but if a suite of high-quality online examples and resources are available in each subject-domain (through micro-credentials, for example), teachers may be able to make more explicit connections

¹⁹⁴ Siegler, R. and others (2012)

¹⁹⁵ Author interview. 26 March 2018

¹⁹⁶ Bull, A., Brooking, K. and Campbell, R. (2008), p. 63

¹⁹⁷ Willingham, D. (2002)

¹⁹⁸ Willingham D. (2018)

¹⁹⁹ Haque, B. (2014)

²⁰⁰ PLD Research Report (Part 2) 2014 (2014), Post Primary Teachers Association. p. 5

between the key competencies and the very real demands they face in accountability systems that, particularly for university entrance, are still governed by subject-specific learning domains.

R2.3 Pilot project learning before requiring it

Pilot project-based learning credits and evaluate their impact before a decision is made about whether to require these credits across the system

Education thought leaders have suggested that one of the ways to support the key competencies is to design rich tasks that involve complex performances for students.²⁰¹ These might include learning experiences without easy answers that require students to draw on a variety of perspectives in finding solutions, which may be offered to real challenges facing real communities. Many New Zealand teachers are engaged in this work and find it highly motivating. Done well, it can lead to extremely powerful learning. Perhaps for that reason, the Ministerial Advisory Group looking at NCEA Review have suggested 20 project-based learning credits at NCEA Level 1.²⁰²

Noting that this suggestion is not government policy, there are a number of considerations for implementing this project learning at scale in the short run:

- Training needs are likely to be substantial. Data indicate that secondary teachers will need significant support – just 23 per cent of secondary teachers report that their students work on projects or activities that make a difference in communities²⁰³
- Expertise among support providers still needs to develop. Without an implementation mechanism, the system would be reliant on service providers to provide training in project-based learning. As one service provider noted, “Project-based learning hasn’t really been a focus at scale in New Zealand, no organisation is dedicated to it.”²⁰⁴ Organisations like the Buck Institute and New Tech Network in the United States have taken years to develop their approach to supporting project-based learning at scale in school districts, and New Zealand providers may need similar timelines to hone their approach.
- Poorly designed project-based learning could detract from essential disciplinary learning. Victoria University of Wellington’s Michael Johnston, who has led work calibrating literacy and numeracy skills across the secondary and tertiary sectors, expressed reservations that a project focus might crowd out critical learning experiences for students.²⁰⁵

I’m afraid project-based learning will just detract from disciplinary learning. I think students can build up a portfolio of learning during the year, and if NZQA panels graded that work, teachers could focus their attention on formative assessment and learning, which would help with teacher workload. But projects might just add to teacher workload and dilute essential disciplinary knowledge.

Attending a meeting at a school with years of project-based learning experience, I was reminded just how difficult the work of managing complex performance tasks with students can be. During the meeting, administrators talked about several dilemmas:²⁰⁶

- How to help teachers learn how to help students to effectively manage projects – plan timelines, set goals, monitor progress;
- How to help teachers have effective coaching conversations with students; and
- How to help teachers effectively support students exploring topics on which the teachers may not have deep content knowledge.

Some teachers had developed expertise in all three facets over years of experience; newer teachers were struggling to understand how to effectively support students with project-based work. And the quality of

²⁰¹ Hipkins, R. and Erb, W. (2015)

²⁰² NCEA Review Discussion Document – Big Opportunities (2018), Ministry of Education

²⁰³ NCEA Review Discussion Document – Big Opportunities (2018), p. 18, Ministry of Education

²⁰⁴ Author Interview. 28 May 2018

²⁰⁵ Author Interview. 15 June 2018

²⁰⁶ Author interview. 23 May 2018

projects varied significantly. Within the school I visited a group of four students in Year 13 that had developed a video game with an elaborate backstory and highly technical 3D modelling software. Three students spoke of the benefits of pursuing project-based learning:²⁰⁷

It's made me more open-minded about things, learning about all this new programming stuff that I might not in regular classes.

It's made me more creative, when I started I was like, just struggling to think of anything new, and then I just had to dig in and find that creativity to build the backstory.

People get some self-respect I think for starting something and for finishing it. You have to drive the project yourself, make your own deadlines to get stuff done. We use a lot of checklists.

These students had produced exceptional work. On the other hand, a significant number of students at lower year levels struggled to produce finished products for their projects – for example, one student's efforts to promote and manage an American flag football league in his neighbourhood had collapsed entirely. A teacher did an admirable job of trying to coach the student (and others nearby lacking finished products) into some kind of reflection on the day I was there:²⁰⁸

Can you write down what actually happened with your project? You can't learn from it unless you think about it. You're down on yourself but just because you don't have a final product doesn't mean you haven't learned anything.

Overall, the school reported both successful and unsuccessful experiences with project-based learning. A teacher spoke of his general sense of how students fare across the spectrum:²⁰⁹

Our top 30 to 40 projects are amazing, but other kids really struggle. We need to understand if kids understand the purpose of the work, and do they have the background knowledge to do the work? Some kids throw in the towel on their project after four to five weeks.

The Ministerial Advisory Group looking at NCEA have suggested requiring 20 credits of project-based learning as part of a revamped NCEA Level 1 certificate.²¹⁰ If adopted as a government policy, the approach should be piloted. This would involve supporting a sample of secondary schools across the country, perhaps 20 or so schools from diverse settings (urban/rural, high/low decile, etc.) to deeply understand the opportunities and challenges project-based learning efforts may present for student learning and local communities. Questions for this work include:

Piloting project learning would allow for a knowledge-base to be built across different communities with unique needs

- What is the impact of implementing project-based learning on local communities? Are communities able to “absorb” the impact of students working in communities at scale?
- What do school leaders do to support effective project-based learning for staff?
- What do teachers do to help students develop projects, organise their time, and stay motivated through to completion?
- What do teachers do to ensure students develop the background knowledge they need to successfully implement projects?
- What role do teachers play in providing feedback to students working on diverse topics?
- Should project-based learning experiences simply tack on to existing NCEA standards, or be offered as unique standards untethered to disciplinary areas?
- What strategies do providers use to successfully assist teachers in project-based implementation?

To help answer these questions, the MoE may consider supporting formal program evaluation of project-based learning efforts that can inform system-wide policy on mandated credits for projects. In concert with schools and NZQA, lessons learned would inform future decisions on using project learning to drive high quality learning experiences for students.

²⁰⁷ Author interview. 23 May 2018

²⁰⁸ Author interview. 23 May 2018

²⁰⁹ Author interview. 23 May 2018

²¹⁰ NCEA Review Discussion Document – Big Opportunities (2018), p. 16, Ministry of Education

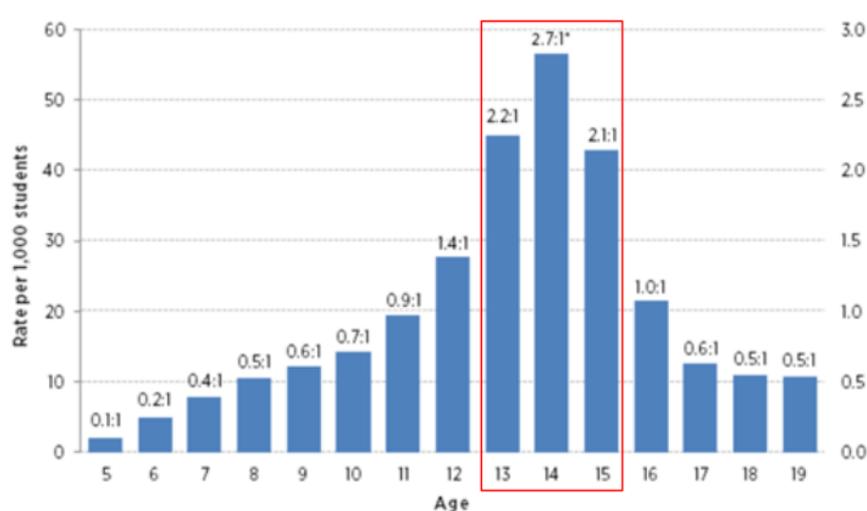
R2.4 Target direct SEL efforts at ages 13-15

Target intensive investments in social and emotional learning programs from ages 13-15, and tie these programs to the key competencies

If there's an area where schools ought to have a deep understanding of what it means to “manage self”, it appears that it ought to be among those teachers that work with students ages 13-15: just over half of stand-downs across New Zealand occur among students in those three pivotal years of schooling at rates double the average of other age levels (see Figure 18).²¹¹ It is possible that part of the reason stand-down rates decline in later years is because students in conflict with the system end up leaving it early—for example, a 2016 report of 41 students in alternative education found that the transition to secondary school overwhelmed most students who ended up in those programs.²¹²

For almost all of the participants schooling began to unravel soon after entering the secondary sector. For some it was a term, for others a couple of terms and a few survived for a whole year... they found the constantly changing classrooms and teachers disorientating and destabilising... many thought that their teachers made no attempt to get to know them or try to find out what was causing their problems.

Figure 18: Stand-down rates by age (2016)²¹³



Longitudinal evidence on reports of self-control suggests that adolescence is a critical time in which to help students develop a set of strategies to regulate thinking and reflect on interactions with others. A study of 1,000 New Zealanders born in Dunedin in 1972-73 found significant correlations between childhood measures of self-control and health, well-being, employment and other outcomes. Self-control ratings predicted future income, savings behaviour, financial security, physical and mental health, and criminal justice convictions among participants.²¹⁴ At the adolescent stage, children with lower self-control levels were more likely to begin smoking, leave school early or experience unwanted pregnancies – so-called “snares” that led to poorer health and less wealth later in life.²¹⁵ The study’s authors recommended a “one-two punch” intervention strategy at multiple life stages – adolescent programs meant to soften the impact of mistakes combined with early childhood efforts to boost self-control.²¹⁶

²¹¹ *Stand-downs, suspensions, exclusions and expulsions from school*, (2018). Ministry of Education

²¹² Brooking, K., Gardiner, B. and Calvert, S. (2009), p. 50

²¹³ *Stand-downs, suspensions, exclusions and expulsions from school*, (2018). Ministry of Education

²¹⁴ Moffitt, T. and others (2011)

²¹⁵ *Ibid.*

²¹⁶ *Ibid.*

Neurodevelopmental theory offers both explanatory evidence as to why behaviour issues may spike in adolescence, as well as encouragement for why lessons on socio-emotional factors may be particularly salient around those ages. During adolescence, neuroscientists note that socioemotional components of the brain are comparatively less developed than some cognitive components of the brain (Figure 19). This means that even when students are aware of the consequences of risky choices, socio-emotional networks override logical decision-making networks, especially under influences such as peer pressure (Figure 20).²¹⁷

Figure 19: Hypothetical comparison of development of logical reasoning vs. psychosocial maturity, ages 11-25

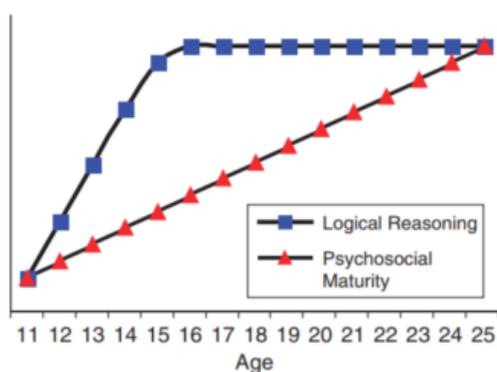
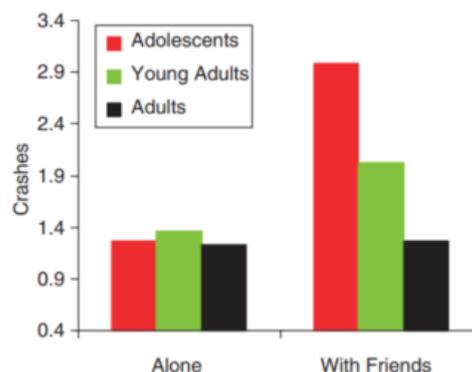


Figure 20: Risk-taking of 3 groups during a video driving game, alone and amongst peers



The paper suggests that on some levels poor decisions are to be expected in adolescence, but the author is quick to caution that behaviour should not be taken as an inevitable consequence of neurodevelopment. Research like that mentioned above is correlational, and changes in the prefrontal cortex (which regulates emotion) may be strengthened through experience.²¹⁸

Yes, adolescents may develop better impulse control as a result of changes within the prefrontal cortex, and it may be true that these anatomical changes are programmed to unfold along a predetermined timetable. But it is also plausible that the structural changes observed in the prefrontal cortex result from experiences that demand that adolescents exercise self-control, in much the same way that changes in muscle structure and function often follow from exercise.

Thus schools ought to equip teachers with deep knowledge about the social and emotional underpinnings behind behaviours they observe in students. Doing so may help teachers empathise with challenging students rather than write them off as inconsiderate or disengaged, and can offer concrete strategies for addressing problem behaviours as well as ensuring students are effectively primed for learning.

For example, in the early days of implementing the key competencies, many schools considered “being on time” a key element of managing self. Some even reported on it directly, as one principal discussed:²¹⁹

When they key competencies first came out some schools were taking account of kids late to school as not managing self, not being on time, and that’s not always their fault.

Of course those attendance patterns might also reflect deeper causes borne out of low self-efficacy or a reluctance to engage with particular teaching styles, the understanding of which might give teachers concrete strategies for dealing with causal factors of observable issues like attendance patterns or disruptive behaviours.

Recommendations that follow suggest micro-credentialing, curricular resources, and collaborative time for teachers as means of developing knowledge of SEL among teachers. Given data that indicate that difficult behaviours and attendance issues emerge most readily among students at ages 13-15, targeting these efforts at teachers working with lower secondary students could provide the greatest benefits across the system. These teachers might then be better prepared to equip students for the lifelong capabilities that the key competencies suggest.

²¹⁷ Steinberg (2007), p. 56

²¹⁸ Steinberg, L. (2012)

²¹⁹ Author Interview. 21 May 2018.

Recommendation Set 3: Developing capacity to support the key competencies

Even with a system designed to monitor progress on key competencies and teachers well versed in their impact on learning, schools must support the conditions for continuous learning that allow for sustained changes to take root. As the University of Auckland's Helen Timperly noted in a 2014 report on school improvement:²²⁰

Individual expertise alone cannot bring about school change. Organisational capacity to develop appropriate systems and processes is also needed.

The recommendations that follow in this section pertain to giving teachers the time, structures, and resources to be able to process the pedagogical changes that can result from developing a focus on the key competencies.

R3.1 Build timetables to maximise teacher collaboration

Ensure teacher collaboration time is maximised within current timetables and teacher inquiries support concrete strategies and processes for inquiry

Well-designed professional learning communities focused on student learning can have positive impacts on teacher practice and student achievement.²²¹ In New Zealand, some evidence suggests that many secondary schools could improve their approach to collaborative learning to maximise its impact: for example, a 2014 ERO report on secondary student achievement found that ten schools out of a sample of 40 were effectively using collaborative inquiry approaches.²²² Many of the strategies used by those schools involved elements of the key competencies – mentoring practices and improved links with whānau among them – yet overall, curricular improvements were relatively stagnant across schools studied.²²³

More recently, some schools have been able to take advantage of extra time for collaborative inquiry led by teachers through Kāhui Ako (also known as Communities of Learning – clusters of schools that organise around shared achievement challenges).²²⁴ Collaborative inquiry can be a pillar of a coherent curriculum: for example, a 2018 ERO report of 12 exemplary secondary schools emphasised the collaboration time successful schools used to focus teacher attention on the key competencies:²²⁵

In the schools where the senior curriculum was coherent, programmes in Years nine and ten included deliberate teaching of the skills, competencies and capabilities of the New Zealand Curriculum. This was achieved in many cases through a collaborative approach to learning. Teachers planned together and included key competencies in their teaching... Leaders provided teachers with release time to work together planning programmes and discussing the outcomes of this planning in relation to student achievement and progress.

Thus even with expanded knowledge of how the key competencies impact teaching, staff members are still likely to need time and guidance on how to implement and monitor teaching strategies in the classroom.

Finding that time is a challenge. By one survey measure, secondary teachers report spending between three and five hours per week on professional learning activities, which could include anything from whole staff meetings to department meetings to individual study.²²⁶ By way of comparison, in some countries teachers spend 15-25 hours per week working with colleagues and meeting with parents, and studies have called for ten hours per week of time for teachers to plan collaboratively and analyse student work in order to ensure effective professional learning.²²⁷

²²⁰ Timperley, H. (2014) p. 17

²²¹ Vescio, V, Ross, D. and Adams, A. (2008)

²²² *Raising Achievement in Secondary Schools* (2014), Education Review Office, p. 23

²²³ *Ibid.* p. 23

²²⁴ *Community of Learning: Guide for Schools and Kura* (2016), Ministry of Education, p. 12-13

²²⁵ *What Drives Learning in the Senior Secondary School?* (2018), Education Review Office, p. 18

²²⁶ *Research Report – Professional Learning and Development* (2013), Post Primary Teachers' Association, p. 12

²²⁷ Darling-Hammond, L., Chung Wei, R. and Andree, A. (2010)

New Zealand teachers in years 7-13 currently have a maximum of 20 hours of timetabled teaching time per week, with that number decreasing by one hour per management unit up to three units for teachers in leadership roles.²²⁸ In addition, teachers are guaranteed five hours of non-contact time per week.²²⁹ Time left over gets carved up by morning tea, lunch, and additional responsibilities related to assessment, administration and lesson planning; teachers and leaders ought to analyse their schedules strategically in order to maximise opportunities for staff collaboration within and across schools.

When they do find time to meet, secondary teachers tend to prefer professional learning with colleagues in similar subject areas, though they need not be limited to contacts in their own schools. A 2013 PPTA survey of New Zealand's secondary teachers provides some insight into the characteristics of effective professional learning from the teacher perspective:²³⁰

The type of PLD that both teachers and leaders find most effective is ongoing, includes looking at students' achievement data, involves reflection time and takes place in a professional learning community, especially with teachers from other schools. The least effective PLD is, for many teachers, a whole staff transmission model delivered in-house.

The share of collaborative time spent reflecting on student learning versus administrative tasks likely varies by school and department: a master's thesis analysing middle leadership at four secondary schools suggests that administrative tasks may tend to crowd out instructional conversations even within departments:²³¹

Middle leaders felt increasing pressure to complete administrative aspects of their job with limited time available, yet they wanted to spend more time on the leadership aspects such as: developing goals, modelling best practice, talking with teachers, and being involved in student learning in order to raise achievement levels... Time was a negative, mitigating factor for middle leaders as they fulfil their role of middle leadership. Ideally, more time would be allocated to middle leaders in order to give them time to deal effectively with the paper work but also time to reflect on their practice in leading the department.

During interviews and school visits both teachers and leaders often lamented a lack of time to investigate new practices, but rethinking timetabling rarely came up as a strategy to address the issue. And background research for this study found little in the way of guidance for New Zealand secondary school leaders in the form of adjusting timetables to maximise collaborative opportunities for staff. There appears to be an NZCER study underway with completion slated for 2020.²³² That work, or others like it, ought to analyse schools or Kāhui Ako / Communities of Learning that have made adjustments to timetabling an important strategy in freeing up time for teachers and middle leaders to collaborate productively.

Block scheduling, staggered teaching schedules, community partnerships, and technology-based models can all be used to create time for teacher collaboration

Timetabling strategies vary, but efforts in the United States have included the following:

- Block scheduling, in the form of fewer subjects per term or alternating A/B days with longer periods²³³
- Staggered teaching schedules that keep students in school for the same amount of instructional days but free up segments of teachers' time for collaboration and planning during off-periods²³⁴
- Partnerships with community-based providers, part-time teachers of elective courses, technology-based models, or regular early release or late start days that give full-time teachers additional time to meet and collaborate²³⁵

²²⁸ *Maximum Timetabled Classroom Teaching Time* (2016), Ministry of Education

²²⁹ *Non-contact Time* (2015), Ministry of Education

²³⁰ *Research Report – Professional Learning and Development* (2013), Post Primary Teachers' Association. p. 2

²³¹ Peak, R. (2010) p. 92, p. 116

²³² *It's Time: School Timetabling for Life-Worthy Pathways* (n.d.), New Zealand Council for Educational Research

²³³ *Optimal Scheduling for Secondary School Students* (2014), Hanover Research

²³⁴ Benner, M. and Partelow, L. (2017)

²³⁵ *Time for Teachers Leveraging Expanded Time To Strengthen Instruction and Empower Teachers* (2014), National Center on Time and Learning, p. 68

Beyond creating opportunities for increased teacher collaboration, there may be additional benefits to rethinking timetables in the form of building more personal relationships with students. A report looking at 41 students in alternative schools found:²³⁶

There were some aspects of secondary schooling that worked against [students'] sense of belonging and engagement. These features included the large size of the schools, the structure and ways secondary schools are organised with constantly changing time-tables, different teachers for each class, an impersonal culture and 'chalk and talk' style of teaching.

Overall then, schools ought to consider how strategic timetabling can create opportunities for enhanced teacher collaboration as well as deepen relationships with students. MoE regional offices might connect school leaders to discuss timetabling strategies, and the MoE, ERO, and/or the Education Council could document unique timetabling strategies and make toolkits available for school leaders.

R3.2 Invest in system-wide middle leader training

Schools should invest in middle leadership training with support from MoE regional offices or service providers

At the secondary level, particularly in large schools, instructional improvement often rests with heads of department or deans that lead teams of teachers. These are deemed “middle leaders”, and while all have deep experience within their content areas as teachers, they may not be trained in critical aspects of instructional leadership. In particular, middle leaders in Māori medium schools (in which te reo Māori is the predominant language of instruction and a Māori-medium curriculum is followed) may be seen as leaders not just within schools but across the entire community they serve, which has significant implications for workload.²³⁷

Beyond questions of workload and instructional improvement, some evidence suggests that middle leaders play a critical role in shaping the support teachers feel at the secondary level. For example, a longitudinal study of 57 beginning New Zealand teachers found that those at the secondary level are less likely to work in supportive environments than their primary colleagues.²³⁸

Preparation for middle leadership, however, is based largely on an apprenticeship model, meaning middle leaders may have undertaken little professional development in preparation for expanded roles.²³⁹ In addition, national leadership training efforts have been directed largely at principals or aspiring principals. In the absence of system-wide investments, service providers offer two-day workshops or online courses, which schools may choose to take advantage of if they have the resources to do so.^{240 241}

These are important efforts, but self-managing schools must make the strategic choice to utilise them. Schools should therefore seek to use professional learning resources to ensure their middle leaders are well-trained to lead instructional inquiry and manage teams effectively.

The MoE has made some resources on middle leadership available for schools, but could potentially take a more proactive approach in working with middle leaders.²⁴² For example, an expanded effort to support middle leaders could include a year-long induction program led by the MoE’s regional offices or service providers that offers training to incoming middle leaders within a region; the Education Council could also play a significantly role in supporting or leading this work. These sessions could be conducted at school-sites, in regional workshops, in online environments, or in some combination depending on costs; research on teacher coaching has found no statistical differences in impacts on student achievement between virtual and face-to-face programs, suggesting flexibility in delivery options for adult learners.²⁴³

²³⁶ Brooking, K., Gardiner, B. and Calvert, S. (2009), p. 42

²³⁷ *Middle Leadership: The Possibilities and Potential* (n.d.), Education Council, p. 3-4

²³⁸ Cameron, M. (n.d.)

²³⁹ *Middle Leadership: The Possibilities and Potential* (n.d.), Education Council, p. 4

²⁴⁰ Robson, J. and Bassett, M (2017)

²⁴¹ *Primary and Intermediate Middle Leaders Workshop* (n.d.), The Education Group

²⁴² *Information for Middle and Senior Leaders* (2018), Ministry of Education.

²⁴³ Kraft, M., Blazar, D. and Hogan, D. (2018), p. 31

The focus of training might include sessions that address the following:

- Practical aspects of time management and project-management to ensure middle leaders are able to effectively streamline significantly increased workloads
- Cultural training to ensure leaders have a background in working with adults who are diverse both in culture and how they view collaboration and feedback within the workplace
- Explicit training in leading inquiry cycles designed for the New Zealand context – cycles that allow teachers to test the impact of teacher learning on student achievement; serve as evidence for appraisal processes; and connect learning efforts to schoolwide strategic goals set out by the principal and boards of trustees
- Explicit training in using research to inform practice so that middle leaders are able to effectively lead peers in developing their knowledge of high- and low-quality research and its implications for teacher practice

Middle leaders that can engage colleagues in discussions and application of research are likely to drive the greatest improvements in teacher practice

This last point is critical for the adoption of key competencies within and across disciplines: as the research base on learning continues to develop across the learning sciences and in educational settings, middle leaders that can engage colleagues in discussions and application of research are likely to drive the greatest improvements in teacher practice. As Massey University researchers have noted:²⁴⁴

Improvements in teaching effectiveness will be closely dependent upon the speed with which (a) teachers come to understand what counts as trustworthy research, (b) teachers begin to select pre-service and in-service education programmes which prioritise the learning of evidence based teaching practices, and (c) teachers themselves begin to use the results of research into what works as they go about the task of deciding what to teach and when and how to teach it... However, in the current system secondary students can stop taking math at Year 11 and science at Year 10. This has meant that many teachers in the primary ranks may not be well-prepared to understand research.

Secondary teachers of math and science thus may have a head start in being able to use research effectively, and those from other disciplines, should they lack background in research methods, may need additional support.

R3.3 Use digital technologies to build skills fluency

Use digital technologies strategically to support differentiation and feedback for students so that they have the background to transfer knowledge across disciplines and within unfamiliar contexts

At one of the first schools visited for this study, a science teacher remarked:²⁴⁵

If I didn't have to spend so much time catching kids up on content we could focus more on soft skills.

On one level, the knowledge-building recommendations that follow would be designed to address a false choice between devoting time to competencies and devoting time to acquisition of content knowledge – teachers with deep understanding of the key competencies would understand how they support learning on discipline-specific academic areas.

But given that student background knowledge is essential for critical thinking, digital technologies offer a potential avenue for secondary teachers to strategically address the content or skills gaps that are fundamental to their learning area, or to provide additional challenge to students who may be performing at a high level.

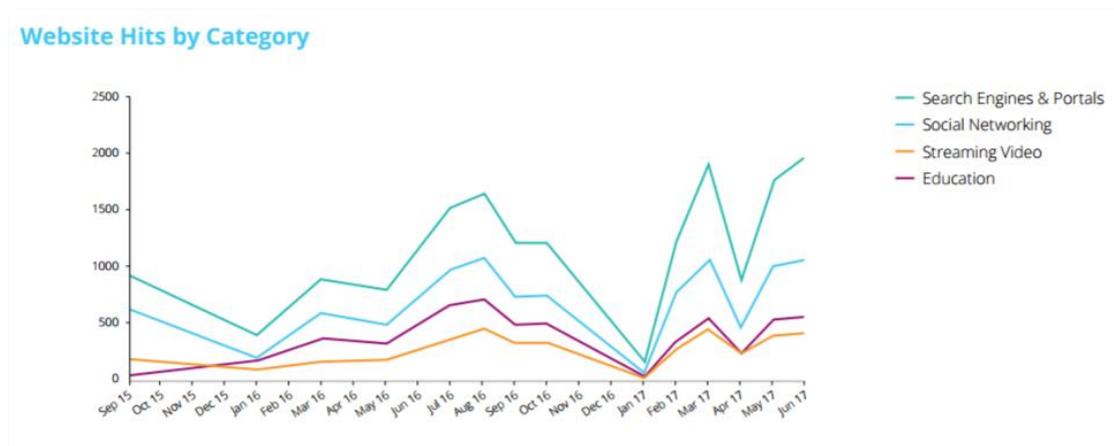
At most schools I visited, teachers had created or collated course materials on a learning platform such as Google Classroom. This practice has the advantage of giving students the power to collaborate in real-

²⁴⁴ Snook, I. and others (2013), p. 98

²⁴⁵ Author interview. 21 March 2018.

time, and in many cases the activities stretch students' thinking as they search out material and build presentations, bringing their own interests and perspective to open-ended work. Data from network usage indicate that this practice is common: Network for Learning's managed network is most often used to search for information rather than consume it. From 2015 to 2017, "growth in searches and education [outstripped] growth in streaming video" (Figure 21).²⁴⁶

Figure 21: Website hits by category



But the productivity of long stretches of class time spent searching for information warrants careful consideration by schools and teachers. At one school I had the opportunity to “shadow a student” for a full day (Figure 22). Across three academic classes, the Year 10 student spent ~2.5 hours working on Google slides, answering math questions posed by the teacher on one slide set (38 minutes) and searching for and summarising information in two additional classes (108 minutes total). The teachers had taken great care to build activities for students and spent most of class time circulating the room, asking students if they had questions. Some students seemed to thrive in this environment; a few spent the majority of class time overwhelmed and searching for images, then copying and pasting text into presentations. In the same way students might tune in and out during long lectures, most students fluctuated between high and low levels of activity working in small groups and independently.

More targeted use of educational digital content might help prepare students for open-ended tasks by providing students the practice they need to be able to transfer knowledge to new contexts. “Practice” does not mean “rote learning”, but rather “deliberate, goal-directed rehearsal paired with reflection on problem-solving processes.”²⁴⁷ Particularly in maths, there is evidence from well-designed research to suggest that digital content that adapts to student performance and provides feedback has a positive impact on learning:²⁴⁸

... a fairly low-intensity online program that provides students with immediate feedback on math homework was found to have an effect size of 0.18 standard deviations, and a more intensive software-based math curriculum intervention improved seventh and eighth grade math scores by a remarkable 0.63 and 0.56 standard deviations... Many of the computer-assisted learning interventions compare favourably with interventions like reduced class sizes, longer school days, and intensive face-to-face tutoring.

There are caveats to consider: many digital content providers are concentrated in the United States, where the context of learning activities differs significantly from New Zealand, and where a heavy focus on maths and literacy means much digital content is focused on those two areas. Thus finding quality, culturally relevant digital content with the features that make it effective may be difficult outside of maths and literacy areas.

Targeted usage of digital content to address specific learning needs may free up planning time for teachers to develop rich learning experiences for students

²⁴⁶ Annual Report (2017), Network for Learning, p. 12

²⁴⁷ Brabeck, M., Jeffrey, J. and Fry, S. (n.d.)

²⁴⁸ Escueta, M., Quan, V., Nickow, A.J. and Oreopoulous, P. (2017), p. 88

But given that teacher-developed content is time-intensive to build, may lack differentiation for students at high or low skill levels, and may not offer real-time feedback, schools ought to consider exactly when home-grown content is most useful and when purchased content might offer a superior alternative. For its part, the MoE could take a more active role in identifying digital programs that work effectively for New Zealand students. Once identified, the MoE could negotiate contracts at scale in order to obtain lower pricing for schools and provide funding for service providers to ensure effective implementation environments are established with teachers.

To be clear, this recommendation does not suggest that digital content ought to replace teachers or face-to-face instructional practices. Rather, as several schools interviewed highlighted the challenge of addressing gaps in knowledge among secondary students, digital content would serve as an additional instructional tool available for teachers. Providing targeted instructional support at the right time can be critical – for example, students without avenues to catch up on knowledge gaps may disengage with school, as a report featuring extensive interviews with 41 students in the alternative schooling system found:²⁴⁹

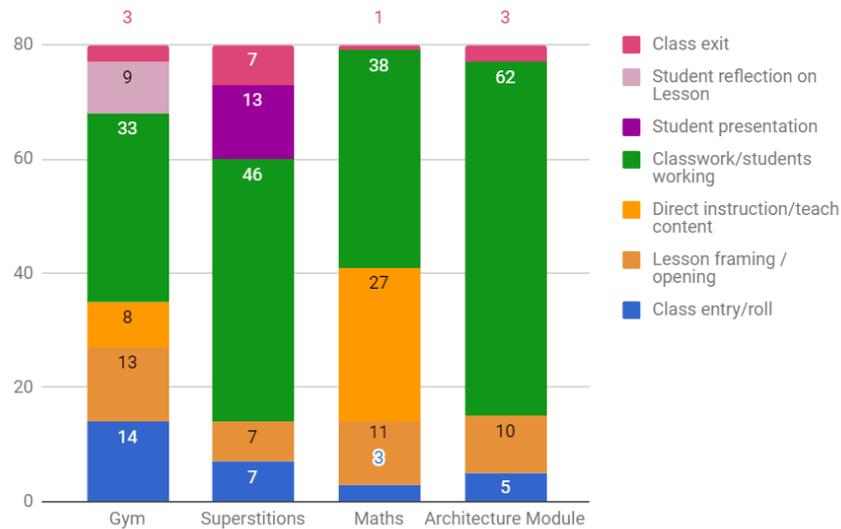
Many students said... that the gulf between their skill level and what was being required of them was too great. They thought that they were expected to jump or close that gap on their own... They reported feeling frustrated, stupid, dumb, helpless and failing. Each successive episode reinforced these feelings leaving them further and further behind, feeling more foolish in front of their peers, and more inadequate. Not turning up for class became a better option for them than having their self-esteem damaged further.

Thus strategic, focused use of digital content might offer a useful pathway for secondary teachers to develop the background knowledge and skills students need to engage confidently with peers and transfer foundational knowledge to unfamiliar situations and contexts.

²⁴⁹ Brooking, K., Gardiner, B. and Calvert, S. (2009), p. 45

Figure 22: Shadow a student for a day

At one secondary school I had the opportunity to follow a Year 10 student (“Andrea”) to four classes, each period totalling 80 minutes. I was interested in how the decisions of individual teachers and departments compound to shape the student experience over the course of the day. The majority of Andrea’s time was spent on classwork (179 minutes). She typically worked online next to a classmate, either building Google slides or answering questions on existing Google slides. During that time Andrea needed to be able to (a) find pertinent information for her slides (b) resolve conflicting information across online sources (c) summarise information found online (d) solve problems, in maths, involving area (e) ask for help from a classmate or the teacher when she got stuck. Her time broke down as follows:



Schools or MoE staff interested in how the key competencies play out during the day might be interested in the following set of questions while “shadowing a student”:

- Thinking – answering questions:** How many times did a teacher ask Andrea a question today? How many times did a student ask her a question today? At what level of depth did questions occur?
- Thinking – generating questions:** How many questions did Andrea generate today? What level of depth did those questions reach?
- Thinking – independent practice:** How many times was Andrea asked to recall information from memory today (e.g. retrieval practice)?
- Relating to others – grouping strategies:** Who did Andrea work with in her classes today? What was the rationale for her choices?
- Relating to others – group work dynamics:** How much of Andrea’s day was spent independently working or thinking (i.e. not relying on partners for support?) How much was spent in collaborative groups? What structures or strategies did those groups use to accomplish learning tasks?
- Using Language/Symbols/Texts – modes of representation:** In what modes of representation did Andrea express her thinking today (e.g. writing, speaking, video, images, etc.)? What learning resources did Andrea consume today (online vs. offline, types of websites, etc.)? In which modes did she thrive, and where did she need assistance?
- Managing self – attention fatigue:** How long is Andrea able to work before a lack of focus seems to set in? How does this vary between online and offline work? Between when a teacher is speaking, classmates are speaking, in group work, and/or individually?
- Managing self – self-assessment:** If/when Andrea is asked to assess her own ability to complete a task, how accurate is her perception of her own ability? Observe Andrea’s self-selection into a group to determine if the choice made is “best fit” and how she fares at the given level of work.
- Managing self – seeking and responding to feedback:** What type(s) of learning evidence was Andrea required to submit today? When / how does she expect to get feedback?
- Participating and Contributing – working beyond school walls:** What aspects of Andrea’s learning could be shared or enhanced with whānau, communities, or other outside partnership?
- Formative assessment:** What checks for understanding did Andrea experience today? How did Andrea feel during those experiences?

R3.4 Field test instructional resources emphasising key competencies

Field test instructional resources that support development of the key competencies in order to provide concrete tools for teachers to use in instructional planning and delivery

A substantial body of evidence indicates the importance curricular materials take in improving student achievement and driving learning experiences for students.²⁵⁰ In particular, some evidence suggests that “off-the-shelf” instructional materials found online, combined with supports to promote use, can lead to gains in student achievement at relatively low marginal costs.²⁵¹

In New Zealand, the determination of what constitutes quality lies within departments at the secondary level, as secondary departments have autonomy in selecting and implementing curricular materials. On top of the responsibilities of day-to-day teaching and leadership of their department, middle leaders bear the responsibility of selecting and evaluating the effectiveness of instructional materials in their learning area. While this allows for customisation to meet learner needs, it also means the quality of instructional materials in use may vary dramatically, and teachers may spend significant time duplicating efforts to build high-quality content.

The MoE can take a more active role in providing quality curricular resources in general and those that support the development of the key competencies in particular. As a 2014 Massey University report recommended:²⁵²

In general the Ministry and its school publications branch have focused on providing resources for teachers to use – leaving teachers free to decide how these resources will be used in the classroom. However, increased levels of student achievement are more likely if classroom teaching is supported by the progressive development of teaching materials which have been field tested and revised until they have been shown to be effective in developing important learning outcomes.

There are two approaches to take on the curriculum front with regard to the key competencies, and two methods of development that might be considered (Figure 23). Purchased programs with a social and emotional learning focus likely offer the quickest timelines for implementation and evaluation at the lowest cost, and therefore may be the best option for validating the impact of providing teachers a concrete set of materials in the classroom. These types of programs are growing in availability, particularly in online environments: for example, the programs EverFi and “Move This World” offer online curricula focused on helping students and professionals manage stress, set goals and build positive relationships.^{253 254} In addition, a holistic social emotional learning (SEL) approach with professional learning and instructional resources can be found in Yale University’s RULER program, which begins work with adult teams before lessons are brought to students.²⁵⁵

From some of these materials, the MoE might build or contract to New Zealand-based providers to develop a local set of materials for SEL skills. There is some precedence for this in the Positive Behaviour for Learning (PB4L) program that took its initial approach from work internationally and customised it for New Zealand, with schools indicating “calmer” learning environments after implementation.²⁵⁶ Leadership for the introduction of PB4L came out of the MoE.²⁵⁷

The introduction in New Zealand of the evidence based programmes contained in the Positive Behaviour for Learning (PB4L) initiative occurred because system leaders in the Special Education division of the Ministry of Education recognised and understood the importance of moving from practices which merely

²⁵⁰ Chingos, M. and Whitehurst, G. (2012)

²⁵¹ Jackson, K. (2017)

²⁵² Snook, I. and others (2013), p. 98

²⁵³ *Community Matters: K-12 Social & Emotional Learning Courses* (n.d.), EverFi.

²⁵⁴ *Tools to Strengthen Emotional Wellbeing* (n.d.), Move This World

²⁵⁵ *How RULER Works* (n.d.), RULER – Yale Center for Emotional Intelligence.

²⁵⁶ Fanselow, M. and Bellet, D. (2018)

²⁵⁷ Snook, I. and others (2013), p. 99

sound plausible to practices which have been shown, in controlled evaluations, to be demonstrably effective.

Developing subject-specific curricula with a social and emotional learning focus likely requires a long timeline, but could provide the best alignment to discipline-specific applications of the key competencies, a core component of the knowledge-building recommendations of this paper. Thus the MoE might seek to establish some “proof points” on the utility of programs with a SEL focus at the secondary level, and if effective, invest in developing similar materials or subject-specific resources that incorporate lessons learned.

An example of facilitating learning from an out-of-the-box toolkit comes from Auckland’s 21C Skills Lab, which helped ten schools pilot ACT Tessera, a test of social and emotional learning skills for students accompanied by lesson plans. The toolkit itself turned out to be the most useful set of resources for one school, which customised some of the general lessons for a community of students and teachers in South Auckland.²⁵⁸

Beyond specific SEL resources, it appears that social science departments in particular could offer ready pathways for students to think holistically about themselves as learners while they work within academic disciplines, as a 2018 ERO report found:²⁵⁹

In several schools with a coherent senior curriculum the social sciences learning area connected students strongly to their own identity and to wider social issues. Students told ERO they valued this connection and encouragement to think deeply about issues affecting their lives and the lives of others.

Thus schools looking to provide students with deep experiences with the key competencies might focus efforts within social studies departments, or in interdisciplinary cases, combine coursework from social sciences with other learning areas.

Figure 23: Considerations for in-house and purchased instructional materials in learning areas and for general SEL development

	In-house development	Purchased programs
Subject-area focus	<ul style="list-style-type: none"> - Time-intensive development - Customisation to National Curriculum (English and Māori-medium settings) - High development cost, lower ongoing maintenance cost - Long development timeline means long evaluation timeline 	<ul style="list-style-type: none"> - Off-the-shelf usage or resources to customise - May not be aligned to National Curriculum frameworks (English and Māori-medium) - Ongoing contract costs - Examples <ul style="list-style-type: none"> • “Facing History and Ourselves” curriculum (US)
SEL focus	<ul style="list-style-type: none"> - Development with New Zealand learners in mind - May provide needed support to form teachers - Teachers may still struggle to implement lessons on content areas 	<ul style="list-style-type: none"> - Off-the-shelf usage or resources to customise - Training may involve PLD for teams of teachers - Instant availability of content means greater ability to evaluate impact in the short run - Programs vary from holistic coaching about SEL to lesson banks teachers can use for SEL - Examples from providers in the United States: <ul style="list-style-type: none"> • RULER (Yale University): PLD and coaching for SEL practices • EverFi: online SEL lessons • Move This World: online SEL lessons • ACT Tessera: SEL assessments, reports, and implementation guidance

²⁵⁸ Author interview. 28 June 2018.

²⁵⁹ *What Drives Learning in the Senior Secondary School?* (2018), Education Review Office, p. 22

R3.5 Support research into school design

Develop a New Zealand research base on the impact of structures that prioritize teacher-student relationships

An additional reason to support school leaders can be found in school efforts to foster mentorship relationships between teachers and students. A 2018 ERO report on 12 secondary schools with coherent curricula noted that several schools lengthened class periods and introduced extended advisory time as part of efforts to promote instructional shifts and support the key competencies. The report noted:²⁶⁰

Leaders had developed appropriate structures such as whānau/ako times, academic counselling and career education at all levels of the school. Typically, the traditional 15 minute form time had become a 30-35 minute period, several times a week, with a lower student-to-teacher ratio. In addition, teachers had undertaken PLD about how to make use of these extended times to understand and support each students' progress, achievement and wellbeing. Teachers knew students as learning and social individuals.

These case studies offer an encouraging finding that building in time to get to know students can support student well-being and assist teachers in development in the key competencies. I found this to be the case in a school I interviewed that implemented a detailed set of lesson plans on character education during advisory periods to emphasise common learner qualities across disciplines. Such efforts have the potential to align staff and students on important priorities and capabilities.

But rigorous quantitative research on the effect of student advisory periods on student achievement is difficult to come by, as many studies focus on self-reported satisfaction measures.²⁶¹ In fact, a recent study found that the more positive students felt about advisory periods, the worse they performed academically—a relationship in contrast to findings in the same study that students who felt more personalisation at their school sites performed better academically.²⁶² Researchers concluded that perhaps students felt that advisory periods offered an inauthentic means of personalisation, which was valued in more informal settings with individual teachers.

As the limited research on advisory time and mentorship comes mainly from the United States, the impact of advisory on school climate, student achievement and student dispositions deserves more research within the unique cultural climate of New Zealand – perhaps advisory periods are more or less effective here given the unique profiles of different New Zealand communities. The MoE could support university researchers in setting up well-designed conditions that study the impact of advisory periods or lengthened course blocks on student achievement and other outcome measures. Doing so would provide a local evidence base for whether secondary schools ought to carve out the time for increased mentorship by teachers in schools, as well as noting the characteristics of effective teacher-student relationships in successful settings.

²⁶⁰ *What Drives Learning in the Senior Secondary School?* (2018), Education Review Office, p. 20

²⁶¹ *What the Research Says (Or Doesn't Say): Advisory Programs* (2011), Education Northwest

²⁶² McClure, L., Yonezawa, S. and Jones, M. (2010)

Recommendation Set 4: Policy Coherence

Many of the knowledge-building recommendations in this paper stem from research in education, psychology and cognitive science that highlights specific mechanisms that underpin learning; many of the economic studies cited show important long-run correlations, but may not offer detail on causal factors that lead to them.

Overall then it is important to consider the set of actors, incentives, and policies that shape the environment in which teachers conduct their work – otherwise there is substantial risk that the most well-understood set of practices associated with the key competencies is simply washed out by pressures in the system. An American researcher discussing practices from high achieving PISA countries noted the importance of the systemic climate in which sound teaching practices are conducted:²⁶³

Our education research tradition has taught us to think in terms of the effectiveness of individual initiatives. We use statistical techniques to create a virtual environment in which we can simulate the effect of the intervention of interest on the outcomes of interest, everything else being equal. Then we wonder why the effects of even the most powerful interventions are almost always trivial. The reality is that the outcomes we care about in education are the result of myriad variables, all interacting in ways we cannot possibly visualize or simulate in our computers, to produce the outcomes we see.

Recommendations in this section are meant to ensure that individual efforts to support the key competencies are not washed out by larger policies or pressures in the system.

R4.1 Streamline professional standards to improve teacher appraisal

Streamline professional standards so that appraisal processes involve reflection on the implementation of the New Zealand Curriculum

Initial training, appraisal and attestation processes offer significant opportunities for teachers and leaders to align on the components of effective pedagogy and reflect on student learning outcomes. A 2014 ERO report noted the importance of effective appraisal practices in creating strategic alignment within schools.²⁶⁴

In the schools with high quality teacher appraisal the system was implemented as part of their planning and reporting cycle. It was linked to the strategic plan, the annual plan, the principal's performance management system, and to decisions about teacher professional development (PLD).

At the moment, however, there are multiple standard sets that guide the training and appraisal of teaching, which can complicate alignment efforts. If the ultimate goal of education in New Zealand is to realise the vision set out in the New Zealand Curriculum, then standards and appraisals of those standards would benefit from clear alignment with that curriculum.

The Education Council provides professional leadership for the teaching profession, including setting guidelines for the 156 approved Initial Teacher Education programs across 25 providers located throughout the country.²⁶⁵ It also sets the standards by which teachers are appraised for continuing work in the profession and standards that must be upheld as professionals; these are a different set of standards from those issued by the PPTA, whose “Professional Standards” are used to determine teacher movement up the pay scale.

Thus multiple sets of professional standards guide the teaching profession from initial training to certification.

- **Initial training:** During initial teacher education, courses that teachers take are approved against the “Graduating Teacher Standards”, managed by the Education Council.

²⁶³ Tucker, M. and others (2011), p. 205.

²⁶⁴ *National Report Summary: Supporting School Improvement through Effective Teacher Appraisal* (2014), Education Review Office

²⁶⁵ *Initial Teacher Education Providers* (n.d.), Education Council

- **During employment, certification:** Once in schools, performance is appraised according to the “Standards for the Teaching Profession”, also managed by the Education Council. These standards are further broken down into 12 “Practising Teacher Criteria” that include one to four indicators each (totalling 31 indicators overall).
- **During employment, teacher pay:** Movement up the pay scale is determined by an attestation process using the “Professional Standards”, developed by the PPTA. These standards are grouped across nine dimensions (“professional knowledge”, “teaching techniques”, etc.) with each dimension broken down into beginner, intermediate, and experienced classifications of practice.²⁶⁶

In this climate a 2016 ERO review found that among teachers there “was some confusion...about what standards and criteria they were to use.”²⁶⁷ And none of these standard sets mentions the New Zealand Curriculum explicitly, though many of the broad ideas contained in the Curriculum are included in the standards. Putting it all together, in the current system it seems possible that teachers can go through attestation and appraisal without deep consideration of the Curriculum. As one former MoE employee put it:²⁶⁸

You’ll meet teachers who actually haven’t looked at the New Zealand Curriculum. They’ve been busy teaching the content in their area for so long they just know the standards and resources they have but they haven’t actually looked at the front of the curriculum.

Additionally, some interviewees expressed the difficulty in helping secondary teachers develop aspects of practice that support the key competencies, such as knowledge of how students learn effectively. One interviewee certified as both a primary and secondary teacher suggested this gap begins in initial teacher preparation:²⁶⁹

In my secondary training it was like “Here’s an NCEA test, how would you teach this content?”, or “Good units look like this”, or training on behaviour management in general. My primary training experience had much more of a focus on how students learn and what strategies teachers can take to engage students in learning.

Streamlining and strengthening the alignment of the New Zealand Curriculum to appraisal and attestation processes might ensure that staff at secondary schools ground inquiry cycles, appraisal evidence and attestation processes in the rich framework of the Curriculum.

If standards for initial teacher education, appraisal and attestation processes more clearly aligned with the New Zealand Curriculum, teachers might engage with a more explicit set of concepts related to key competencies at multiple stages in their careers

For example, a current matrix aligns the Education Council’s Standards for the Teaching Profession and Practising Teacher Criteria with the PPTA’s Professional Standards (the Graduating Teacher standards are not included); the Education Council could work with the MoE and the PPTA to determine how this matrix aligns with critical components of the New Zealand Curriculum (Figure 24).

Ideally, a mapping of four different frameworks would be reduced to one or two so that there is less confusion in the sector about which criteria apply when, and an elevated focus on the components of social-emotional learning found in the key competencies. The final step would be to offer training for principals and middle leaders in using the appraisal process to

explore and deepen implementation of the key competencies in practise at the secondary level – this would include planning on how leaders use appraisal processes to set strategic goals and align professional learning opportunities to focus areas.

²⁶⁶ Supplement 1 Professional Standards for Secondary Teachers – Criteria for Quality Teaching (2015), Post Primary Teachers’ Association

²⁶⁷ Appraisal as a Catalyst for Improved Learner Outcomes: One Year On (2016), Education Review Office, p. 9

²⁶⁸ Author Interview, 28 June 2018

²⁶⁹ Author Interview, 29 May 2018

Figure 24: 1:1 Sample mapping of teaching standard sets with the New Zealand Curriculum

Standards for the Teaching Profession (Education Council) ²⁷⁰	New Zealand Curriculum (MoE)	Professional Standards (PPTA) ²⁷¹	Graduating Teacher (GT) standards (Education Council) ²⁷²
Te Tiriti O Waitangi partnership	Principles	Te Reo me ona Tikanga	GT's understand how contextual factors influence teaching and learning
Professional Learning	----	Professional Development	----
Professional Relationships	----	Support for and co-operation with colleagues, Contribution to wider school activities	GT's are committed members of the profession
Learning-focused Culture	Values	Student Management, Effective Communication	GT's develop positive relationships with learners and the members of learning communities
Design for Learning	Key competencies	Motivation of Students, Professional Knowledge,	GT's know about learners and how they learn, GT's use professional knowledge to plan for a safe, high-quality learning environment
Teaching	Effective Pedagogy	Teaching Techniques	GT's know about learners and how they learn, GT's use evidence to promote learning

There is some risk that a significant amount of time and energy can go into realigning standard sets with very little impact to be had on teacher practice. Therefore, any alignment of standards that emphasises teacher knowledge and practice of the key competencies must be followed by actions from universities and school leaders that prepare teachers well and recognise them for their efforts in the field.

A variety of education agencies can support that work. For example, in recent years the Education Council contracted ERO to moderate the appraisal process in at least 10 per cent of schools.²⁷³ In 2016, ERO found that 73 per cent of appraisal endorsements across 841 institutions (primary and secondary) were based on sound appraisal practises.²⁷⁴ This is a significant difference (though the data sample differs) from an ERO review of 200 schools in 2014 that found that just 4 per cent of secondary schools had “high quality appraisal systems”.²⁷⁵ Regardless, it would seem that heightened attention on appraisal practices based on consistent criteria would create conditions in which teachers are aligned on effective

²⁷⁰ *Matrix aligning Standards for the Teaching Profession with Professional Standards (Secondary: Fully Certificated teacher) and the Practising Teacher Criteria* (n.d.), Education Council

²⁷¹ *Supplement 1 Professional Standards for Secondary Teachers – Criteria for Quality Teaching* (2015), Post Primary Teachers' Association

²⁷² *Graduating Teacher Standards: Aotearoa New Zealand* (2015), Education Council

²⁷³ *Appraisal as a Catalyst for Improved Learner Outcomes: One Year On* (2016), Education Review Office

²⁷⁴ *Ibid.*, p. 1

²⁷⁵ *National Report Summary: Supporting School Improvement through Effective Teacher Appraisal* (2014), Education Review Office

instructional practices. For secondary teachers that haven't had occasion to reference the front end of the New Zealand Curriculum, appraisal and attestation offer the means to do so on an ongoing basis.

R4.2 Broaden learning evidence in the Record of Achievement

Broaden the Record of Achievement from a list of credits to a portfolio of learning experiences and achievements

In a focus group at an Auckland school, several students suggested that one of the problems with NCEA is that it does not reflect their full body of knowledge and skills. One of them summed up the thinking:²⁷⁶

I don't know how fair it is to be tested on your whole year's work in three hours. I wish people could see the work we do during the year to get there.

The student mentioned heightened anxiety caused by test-taking experiences, something that remains a factor in exam settings: research from New Zealand and elsewhere suggests that students from priority groups in particular may suppress negative thoughts and feelings during high stakes cognitive tasks. This expends mental energy and may worsen cognitive performance (see Figure 11 for detail on "test anxiety").^{277 278 279}

The student suggested something akin to a portfolio of work as a means of assessing knowledge. Online portfolios that include student work samples, reflections, extracurricular activities, and recommendations from teachers and employers offer one possible way to value the full range of experiences students undertake in secondary schools. Several schools that I visited keep portfolios already, and in these environments, students spoke of the accountability that comes with a transparent body of work:²⁸⁰

Our learning journeys are kept on a Google site, so it's pretty easy to take a look and see if someone is not doing anything during the year.

Outside of school, Josh Williams of the Industry Training Federation noted that in its current state, few employers look deeply into the current Record of Achievement:²⁸¹

Employers tend not to use the record of achievement because it's just a list of standards. At events I'll ask people to raise their hand if they've seen one and they typically say no. Employers tend to start the conversation with 'I see you've got NCEA, now tell me about your skills.'

A further reason to develop a portfolio model is that it may represent the most accurate means possible of capturing difficult-to-measure social and emotional skills such as conscientiousness, perseverance, and curiosity. As cognitive psychologist Daniel Willingham notes on measuring concepts like grit, at this point the most accurate measurements possible may simply be observable behaviours among students; self-reported questionnaires still have important limitations. For one, students might simply fill out the answers they expect reviewers to value rather than their true opinions. Another problem, known as reference bias, occurs when students base their answers in comparison only to people they know, which can inflate or discount responses. Willingham notes:²⁸²

At the moment the most accurate way to monitor the key competencies may be through observable student behaviours

One way around these problems might be to examine a person's record of achievements for signs of grit. For example, a high school student who had committed to an activity – the school newspaper, say – for four years, and was made an editor in her final year, has shown grit. That's probably as close as we are right now to a measure of grit that can be used in real-life contexts for decisions in schooling and employment.

²⁷⁶ Author interview, 21 March 2018

²⁷⁷ Ewing, H. (2015)

²⁷⁸ Good, C., Aronson, J. and Inzlicht, M. (2003)

²⁷⁹ Steele, C.M. and Aronson, J. (1995)

²⁸⁰ Author interview, 23 May 2018.

²⁸¹ Author interview, 29 March 2018.

²⁸² Willingham, D. (2016)

The New Zealand Qualifications Authority ought to take the lead in updating the Record of Achievement to allow students to showcase work and demonstrate achievements that go beyond NCEA credits. Doing so will provide value to employers and universities as well as encourage teachers and students to reflect on a full range of efforts that may involve the key competencies.

R4.3 Make identification of rich standards user-friendly

Provide a database or toolkit that allows school leaders and teachers to prioritize standards that support development of the key competencies

NCEA currently places an emphasis on being able to use “naturally occurring evidence” of student learning. For example, if students read and write extensively in a social studies course, they can receive credits that count towards a literacy requirement. One social studies teacher described her approach and rationale for interdisciplinary credits as follows:²⁸³

I worked on a social studies course but put in science credits. I'm not even sure if anyone noticed. The kids did of course. I just want to make sure they get credits for the learning that they're doing.

In theory, practices like this allow students to obtain credit where credit is due; in practice, a social studies teacher without training in literacy expertise becomes the teacher and assessor of literacy standards.²⁸⁴ Another potential issue is learning design that occurs in isolated departments without a schoolwide view to the types of experiences students have on offer. For example, there are 737 credits available for literacy and numeracy, and rigour can vary significantly. A principal noted in 2016: “...you could get all of the literacy credits from doing physical education – right there's the heart of the issue.”²⁸⁵

Overall then schoolwide and department leaders ought to have a good handle on which credits students are working on across the school in order to understand the holistic learning experience offered to Years 11-13 students. In particular, some standards call for explicit efforts to demonstrate the key competencies, such as social studies standards that encourage students to interview community members and make a plan for their attempts to gather primary and secondary sources.

Interviews for this paper indicated that much of the detailed knowledge of standards resides within departments of secondary schools that typically make instructional decisions independent of one another. NZQA could support school and department leaders and those working with them by publishing a database of achievement and unit standards that includes the description of each standard; currently, to find this information, users need to click into different subject area pages and pdf's on the NZQA website.

An additional metadata feature could be a field that flags specific key competencies that students draw on to meet a standard. In the aforementioned example, a social studies standard that calls for students to interview community members could be tagged with “Participating and Contributing”. A school could

Middle leaders deeply understand the standards in their content areas; principals may not have an easy way to grasp the learning demands that teachers present across content areas

pull up standards with this tag and ensure that at some point every graduate is asked to work on a standard that involves “Participating and Contributing”, and teachers could filter and look across subjects to see how “Participating and Contributing” occurs in disciplines outside of their own. Such tagging could also prevent students from repeat learning experiences across learning areas.

In sum, providing leaders with an accessible database of NZQA standards tagged by competencies could support schoolwide efforts to understand the full scope of learning that students experience. While flagging credits that students ought to attempt may limit student choice, students in one focus group indicated this is a trade-

²⁸³ Author interview. 31 May 2018.

²⁸⁴ Hipkins, R., Johnston, M. and Sheehan, M. (2016), p. 174

²⁸⁵ ‘School Leavers’ Skills under Fire’, *Radio New Zealand*, 7 March 2016

off they are willing to make. Two students summed up the sentiment as follows:²⁸⁶

I mean that's cool to try to have us design our learning, but we also don't know what we don't know.

Sometimes we don't know the true impact of our choices of credits until it's too late

Echoing these sentiments, a principal at a different school made the same point almost verbatim, emphasising the role teachers play in learning design:²⁸⁷

Kids don't know what they don't know. They'll often want to assemble learning that has no progression.

We thought 'we have teachers here, let's let them teach' and build out that design rather than have the kids just drive everything.

Currently, student information systems may allow leaders to see the standards that students are working on. For example, some schools visited for this study used Linc-Ed,²⁸⁸ a platform developed by a former principal that shows which standards a student is attempting and offers suggestions for what the student might attempt next.

But mapping out clear learning progressions within and across disciplines, and developing an understanding of how the key competencies are manifest in those standards, could be facilitated at the outset by making the achievement and unit standards easier to sort and filter through a database widely available to teachers and school leaders.

R4.4 Ensure evaluation of internal processes drives review cycles

Implement review cycles focused on processes for sustaining professional inquiry and organisational performance to avoid overreliance on traditional measures of student achievement

In the realm of assessing overall school performance, individual schools “select the approach and tools used for internal evaluation”, while the Education Review Office (ERO) “complements the evaluation activities of schools.”²⁸⁹ ERO conducts reviews at varying cycles, and these external reviews exist alongside those audits that schools undertake internally. Similar to teacher appraisal processes, multiple frameworks may be used:²⁹⁰

The Ministry requires schools to self-review in relation to charter goals; ERO also requires schools to engage in self-review. Different frameworks are used by these agencies and the evidence they draw on crosses over with other agencies and frameworks.

Across the sector, school quality is commonly gauged by the gap in ERO’s external review cycles – schools that are struggling will see ERO reviewers return within one to two years, those found to be running well experience a review within four to five years, and schools in between will be on a three year review cycle. In a self-managed system where accountability lies with individual schools and interventions are required in exceptional cases, researchers have noted that school leaders can go on the defensive when review cycles are shortened and recommendations from the Ministry or ERO are given:²⁹¹

[There is] a culture in which any externally-initiated intervention is risky, because it inevitably communicates the message of exceptionality and failure... [the state's] cautious messages about what and who needs to improve contribute to lack of trust and defensiveness. School leaders may feel they have failed the system's expectation of self-managed success.

Some interviewed leaders for this report highlighted this state of affairs, emphasising that at the secondary level NCEA attainment is the primary metric on which they feel pressure to perform over and above attempts to fully realise the New Zealand Curriculum. To some leaders, it seems that schools with

²⁸⁶ Author interview. 31 May 2018.

²⁸⁷ Author interview, 29 May 2018.

²⁸⁸ Linc-Ed (n.d.)

²⁸⁹ *School Evaluation Indicators: Effective Practice for Improvement and Learner Success* (n.d.), Education Review Office, p. 10

²⁹⁰ Timperley, H. (2014) p. 8

²⁹¹ Robinson, V., McNaughton, S. and Timperley, H. (2011), p. 22

high NCEA achievement are left with long review cycles regardless of their internal processes, while their own efforts to implement the Curriculum left them with short review cycles. This can cause leaders to be dismissive of external attempts at support.²⁹²

It feels like ERO and the Ministry are laser-focused on achievement. It's like there's the front end of the Curriculum, and then the back end, which is how we actually judge you as a school, on NCEA Level 2.

Overall, survey data from 2015 indicate that many secondary school leaders value the guidance ERO provides on self-review, with 80 per cent in agreement these guidelines “have been useful”.²⁹³ Those same leaders are less enthusiastic about ERO’s ability to “provide a reliable indicator of the overall quality of teaching and learning in a school”, however, with 56 per cent agreeing ERO reports do this well.²⁹⁴

ERO should thus continue to devote significant attention to the internal processes schools use to drive instructional improvement and how these processes support the implementation of the New Zealand Curriculum as a whole. Review cycles should be set based in large part on those processes so that NCEA attainment does not serve as the primary criteria of evaluation. And lessons learned from process reviews should inform the MoE’s efforts to provide resources for effective professional learning in schools.

A focus on process is consistent with research that suggests the complexity of individual school sites demands process solutions in order to sustain improvements – the University of Auckland’s Helen Timperley commented that ERO is well-positioned to deliver on this approach and therefore support complex instructional change.²⁹⁵

...this approach is the closest to ERO’s self-review cycle and has demonstrated some sustained success at scale under particular conditions (Lai, McNaughton, Timperley, & Hsiao, 2009; Timperley & Parr, 2009). In essence, it involves collecting evidence on patterns of achievement and learning; critically examining this evidence; developing hypotheses about more effective teaching; providing targeted professional development, paying careful attention to coherence of assessment; and managing teaching resources around the change.

R4.5 Incentivise employer and community collaboration with secondary schools

Incentivise employers, community organisations, and/or universities to collaborate with secondary schools at scale

The Ministerial Advisory Group looking at NCEA has suggested requiring credits in project-based learning through industry, university or independent research. At scale the partnerships aspect would be a challenge with employers in the current environment. Multiple interviewees discussed their attempts at supporting the key competencies through employer-based experiences, with challenges in setting up relationships as well as ensuring quality feedback for students.

Partnerships take a lot of time to set up. We came to an employer with ten students one time because we had that level of interest but not a lot of partners and they got uncomfortable with the number of students, it was like, ‘We wanted to help, but not this much.’²⁹⁶

Partnerships is a fairly inefficient thing. I had one coordinator for 60 students for Gateway at one point. We had 46 different organisations for placements. There’s just no time to develop a shared language of learning with employers like that. And feedback for students can be really lacking in those environments.²⁹⁷

This suggests that should efforts to engage more employers with secondary schools be undertaken at scale, employers may need incentives and training to ensure the experiences they offer for students provide meaningful learning opportunities with constructive feedback.

²⁹² Author interview. 28 May 2018

²⁹³ Wylie, C. and Bonne, L. (2015), p. 143

²⁹⁴ Ibid.

²⁹⁵ Timperley, H. (2014)

²⁹⁶ Author interview. 29 May 2018

²⁹⁷ Author interview. 9 May 2018

A 2016 Future of Work plan from the Labour party called for levies on employers that did not provide training opportunities; however, this has not come into effect.²⁹⁸ A potentially more palatable strategy would be to forego penalties in favour of offering incentives. Internationally, some governments provide tax credits for employers that take on university interns. For example, the regional governments of Ontario in Canada and North Dakota in the United States both provide tax incentives for employers that train interns.^{299 300}

The Government could test this idea in both urban and rural areas before enacting a national policy on workplace-based credits, determining how employers respond to incentives to take on secondary students at scale. Additionally, offering short, modular training experiences for employers and equipping them with app-based forms of capturing achievement (such as a program like SeeSaw, which allows teachers to share photos and videos of student work with parents) could improve the information flow from employers to school-based employees looking to gauge the effectiveness of learning in job settings.

R4.6 Ensure tertiary requirements do not override secondary curricula

Work with universities to ensure admissions policies contribute to a secondary school experience consistent with the overall vision of the New Zealand Curriculum

Universities play a large role in determining the pathways students pursue in high school course selection. Currently students need to have 14+ credits in three subjects in order to qualify for university, although there are some pathways for discretionary entrance.³⁰¹ The effect is that schools begin planning pathways based on university entrance requirements as early as Year 10.³⁰² It can also lead to pressures to accumulate credits. As one student noted during interviews for this report:³⁰³

My friend did 17 external exams at her school to try to get into university. She said 'There was just so much and I didn't have time to study things in the depth that I wanted.'

On the other hand, some schools interviewed mentioned that some universities are taking a more holistic look at student work in order to determine entrance, giving weight to student activities and work products alongside NCEA credits:³⁰⁴

We encourage students to provide evidence of their projects, and our kids have gotten scholarships based on their work. Massey University in particular is looking at more than academics for admittance.

Broadening the criteria for admissions has some support in research into non-academic factors in achievement. For example, a meta-analysis of 200 studies and 50,000 students concluded that curiosity is as predictive of academic performance as intelligence and the tendency to work hard (conscientiousness). The authors of the study argued that schools and universities ought to “encourage intellectual hunger and not exclusively reward the acquiescent application of intelligence and effort” as well as “pay greater attention to curiosity as [an] important indicator of potential and ability” in admissions selection methods.³⁰⁵

With major questions about the preparedness in literacy and numeracy of students at university, however, a balance should be struck between ensuring students are academically prepared and honouring other factors that may be indicative of potential.

²⁹⁸ *The Future of Work* (2016), New Zealand Labour Party

²⁹⁹ ‘Co-operative education tax credit’ (n.d.), Ontario Ministry of Finance

³⁰⁰ ‘Internship employment credit’ (n.d.), Office of State Tax Minister – North Dakota

³⁰¹ ‘University entrance’ (n.d.), New Zealand Qualifications Authority

³⁰² *What Drives Learning in the Senior Secondary School?* (2018), Education Review Office, p. 32

³⁰³ Author interview. 23 May 2018

³⁰⁴ Author interview. 23 May 2018

³⁰⁵ Von Strumm, S., Hell, B. and Chamorro-Premuzic, T. (2011)

IV. CONCLUSION

This report makes a number of recommendations that may be led by different organisations and agencies within the education sector. Figure 25 uses an importance-complexity framework to provide a mapping of recommendations for consideration.

I categorized the “importance” and “complexity” of each recommendation using a rough estimation of high, medium or low for each set of criteria, and then considered which organisations might lead the work as well as those that support it. The full details of this work can be found in Appendix 5.

I used the following estimates for the complexity ranking:

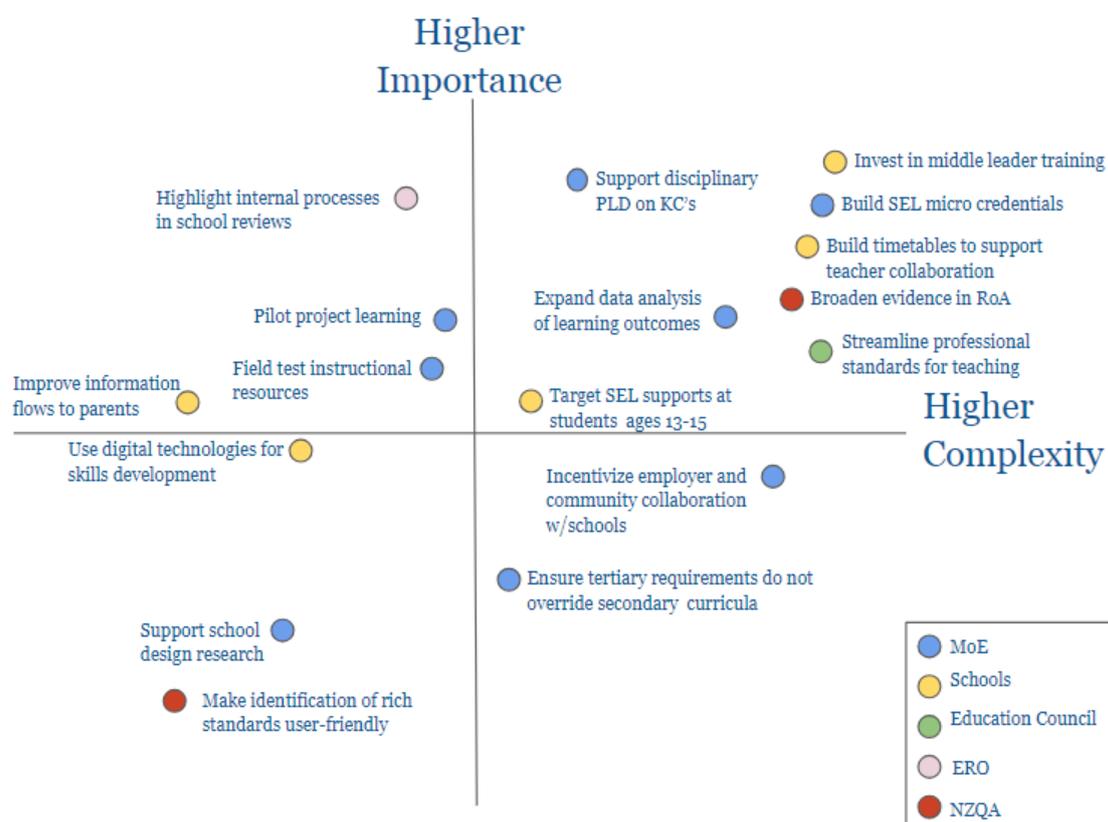
- High – requires many actors or a significant amount of analysis or investment to implement;
- Medium – requires fewer actors or analysis to implement; and
- Low – can be implemented by 1-2 organisations/agencies with minimal consultation of other actors.

For the importance ranking, I considered the following:

- High – Critical to aligning the system to support development of key competencies and likely to have benefits to additional change efforts within schools;
- Medium – will support development of key competencies and may have additional benefits for change efforts within schools; and
- Low – less likely than other recommendations to have broad impacts on the education sector beyond the key competencies or may take longer than other recommendations to lead to instructional change within schools.

Looking at the framework, a variety of actors in the education sector have critical roles to play in ensuring that the key competencies are fully realised through the implementation of the New Zealand Curriculum.

Figure 25: Importance-complexity framework for recommendations



Schools: Implementing, learning from, and reporting on change

Schools can take a number of actions autonomously to support knowledge of the key competencies, develop capacity to learn from implementation efforts, and ensure that there is coherence in reporting on a broad set of student outcomes.

In particular, schools can immediately analyse timetables to ensure that teacher collaboration time is maximised, and school leaders can take an active role in identifying those departments most adept at leading instructional change and scaling those practices. Investing in middle leader training as part of professional learning can help lessen the burden on principals to drive instructional change and lead to high quality collaboration among teachers.

In addition, school leaders can ensure that reporting to parents takes account of learning experiences that develop the key competencies, such as having students reflect on their work in student-led conferences; at the least, schools can look to improve information flows to parents on student achievement as well as student involvement in extracurricular activities and attendance patterns so that parents are fully informed of student engagement in the school day.

Within and across departments, schools can use data to diagnose where students might benefit from additional resources for learning and use digital technologies to support that learning; in so doing, teachers might find that rather than spend time building content for remediation or acceleration, they have additional time to develop learning experiences that support the key competencies.

Finally, as secondary schools consider where to target efforts to develop the social and emotional skills that underlie the key competencies, they may want to begin with students aged 13-15 to provide sound transitional support for the cohort most likely to struggle adapting to secondary school. Upper secondary schools might target efforts most acutely at Year 11 students.

NZQA: Sharpening the focus and broadening the evidence of learning

The New Zealand Qualifications Authority (NZQA) plays a role in defining the learning achievements that become part of student records as well as outlining the standards of learning for secondary schools.

By broadening the learning evidence available on a student's Record of Achievement (RoA), NZQA would signal that mastery of credits by examination is not sole product of student learning. A RoA that allows for students to showcase actual work products would allow students to demonstrate to universities and employers the type of work they are capable of and may lead both actors to a more well-rounded picture of student achievement.

In addition, NZQA can facilitate learning experiences that emphasise key competencies by providing a database that allows school leaders and teachers to quickly analyse credits across learning areas. This would allow teachers from multiple learning areas to see what collaboration, planning, reflection, and community engagement look like across disciplines and help school leaders gauge the types of evidence and processes for learning that students are exposed to across the school. In that sense, schools might be able to streamline the vast array of standards currently available into the most powerful combination of learning experiences possible for developing the key competencies.

ERO: Evaluating schools as incubators for change

The primary mechanism by which the Education Review Office (ERO) can support the key competencies is through the school review process.

The time elapse between ERO reviews – from one to five years – offers a proxy for school quality. Many school leaders interviewed for this report suggested that the timing of these review cycles is driven mainly by NCEA achievement data, feeling that the lower the school performs on NCEA Level 2 exams, the sooner ERO will return for another evaluation.

ERO thus must take internal processes into account as much as NCEA performance in order to instil confidence among school leaders that NCEA attainment is not the sole metric of a quality school environment. This may result in schools with stellar NCEA scores being placed on a shorter review cycle, while schools with lower NCEA attainment but solid foundations for supporting instructional change and student well-being would see longer timelines between reviews. Such scenarios would encourage school leaders to focus on the organisational learning needed to sustain shifts that support the key competencies rather than succumb to perceived pressure to accumulate NCEA credits at high pass rates.

Education Council: Aligning the goals for teacher preparation and appraisal

The Education Council ought to take the lead role in ensuring standards that guide teachers from initial preparation to appraisal account for the social and emotional skills of the key competencies. Currently a teacher undergoes university training aligned to standards that are different from those he or she will face in the field during both attestation and appraisal practices. If the concepts of the key competencies become central to teacher preparation, appraisal, and attestation, there is a greater probability that teachers grow in their understanding of those competencies at different stages in the lifecycle of their instructional careers.

Aligning standard sets involves coordination with the PPTA as well as coordination with university partners on initial teacher preparation, which adds complexity to the process. And clearer standards need to be acted upon by leaders at school sites – thus support for school leaders conducting appraisal and attestation may need to be coordinated in order to maximise the impact of aligned professional standards.

Ministry of Education: Coordinating alignment across the sector

The Ministry of Education (MoE) is the lead agency in the sector and therefore fills a number of functions in supporting the key competencies.

With regard to professional learning, the MoE alongside the Education Council should support middle leader training as well as professional learning efforts that ground the key competencies in disciplinary frameworks. While the key competencies are relevant across disciplines and can be enhanced by interdisciplinary experiences, secondary teachers still primarily teach within disciplines and learn together within departments, expressing a preference for professional learning grounded in their content areas. The middle leaders that support teachers, such as department heads, play a critical role in everything from selecting instructional resources to determining how students are assessed. These leaders and deputy principals often function as the primary instructional leader for teachers: ensuring they are well prepared as leaders of adult teams will help schools navigate the instructional shifts that are required to support deep learning through key competencies.

To provide a clearer set of guidelines on exactly how the key competencies support learning, the MoE can also work with the Education Council and NZQA to offer micro-credentials on social emotional learning (SEL). These credentials would offer clear content to schools and teachers that have simply struggled to find the time and resources to unpack the key competencies at a local level – something that has proven challenging even for researchers even at the national level.

The MoE can coordinate pilot efforts in the areas of instructional resources and in the form of project learning. While individual departments across the country build and select instructional resources, the Ministry can fund the development or purchase of materials that emphasise the key competencies in different learning areas; where resources prove effective, the MoE can then share the information with schools to inform their selection of materials. The MoE could target at least some of these efforts at students ages 13-15 – data show these students account for the majority of disciplinary issues in the education system as a whole, and students at these ages are in critical transition years into secondary schools and adolescence. Instructional resources rich in social and emotional components that support the key competencies ought to help these students navigate a challenging period of life.

The Government ought to take a pilot approach to understanding the impact of project-based learning credits (as has been put forward by the Ministerial Advisory Group looking at NCEA). Blanketing the entire system with a credit mandate risks creating conditions in which schools must meet a new policy guideline without having the proper supports to do so; testing out this policy in select schools at first would help the Ministry identify what type of support is needed to scale project learning if it is indeed deemed an effective methodology for teaching and learning across communities. Conducting formal program evaluation on project learning would also provide local research that would ensure practitioner-based learning is taken into account.

With regard to measuring the impacts of work such as project learning, the MoE can broaden its data analysis and collection efforts. The MoE can support the development and design of school climate and student surveys that schools can use to measure social and emotional learning (though data should not be used to compare schools). In addition, the MoE can use data schools already collect along with data from other sectors to gauge the holistic impact schools have on student outcomes – for example, determining whether non-academic data such as attendance or involvement in extracurricular activities predicts university attainment, employment or health outcomes. The MoE can also influence the ways

that schools report on student success by working with schools to understand how conferencing with whānau along with reporting practices impact the measurement of student progress in school.

Finally, the MoE can play a coordinating role in ensuring employers and universities are engaged with the impact they have on secondary school options. In particular, employers likely need incentives to take on the influx of students that would accompany a policy change that requires work experience, such as that proposed by the NCEA review Ministerial Advisory Group; offering a tax incentive and training (an effort that would likely be need to be taken over by the Ministry of Business, Innovation and Employment) might ensure more employers engage with the education system and do so in an effective manner. In addition, the MoE ought to work with universities and the Tertiary Education Commission to ensure both groups have confidence in the current set of NCEA requirements and realise the impact that university admissions criteria have on the course offerings and instructional climate of secondary schools.

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APPENDIX

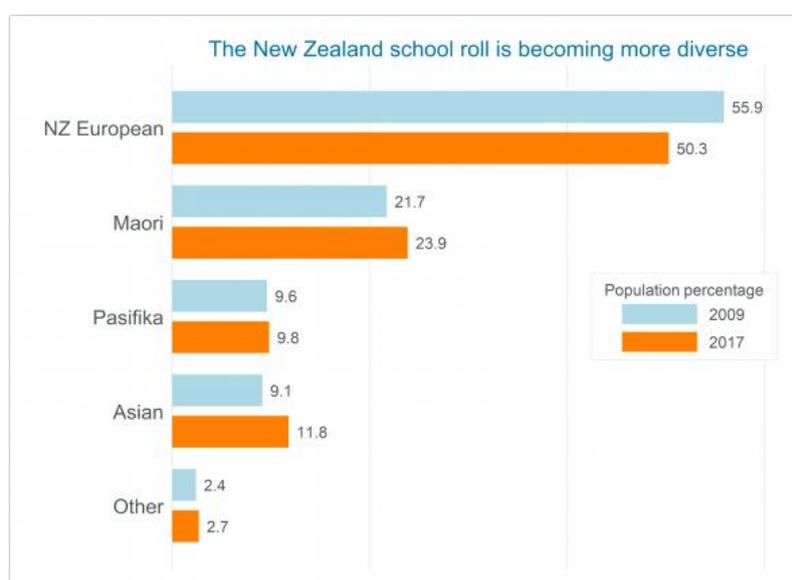
APPENDIX 1: STRUCTURES AND TENSIONS IN THE EDUCATION SYSTEM

This section outlines key features of the New Zealand education system. Those familiar with New Zealand's education system may wish to scan it; those from an American audience may wish to read closely in order to familiarize themselves with the key structures and current issues faced in New Zealand education.

New Zealand's roughly 2,500 schools educate 815,816 students, according January 2018 figures from the Ministry of Education.³⁰⁶ Students are legally required to attend school from the ages of 6-16, though most children begin schooling at age five.³⁰⁷

Overall, the school population is becoming more diverse – in 2017 roughly half the student population identified as European, compared with 23.9 per cent Māori, 11.8 per cent Asian, 9.8 per cent Pasifika, and 2.7 per cent other, a category that often accounts for Middle Eastern or African descent.³⁰⁸

Figure A1: Ethnic diversity in New Zealand State Schools³⁰⁹



An essential function of the New Zealand government is to design an equitable education system that takes into account the diverse cultural backgrounds of New Zealand students and families. The Treaty of Waitangi provides a set of principles to guide that task.

The Treaty of Waitangi

The Treaty of Waitangi serves as New Zealand's founding document. In 1840, 500 leaders signed the treaty with representatives of the Crown. The Treaty was translated in both English and Māori, with important distinctions between the two. For example, many Māori leaders believed they were giving up sovereignty of their lands, but not governance; in addition, the English version of the treaty called for "possession" of Māori "properties", while the Māori version guaranteed "tino rangatiratanga" (full authority) over "tāonga" (treasures), which could include land, language, and intangible objects.³¹⁰ Today

³⁰⁶ 'New Zealand Schools' (2018), Ministry of Education

³⁰⁷ 'Highest Attainment Numbers (2009-2016)' (n.d.), Ministry of Education

³⁰⁸ *Ethnic diversity in New Zealand State Schools* (2018), Education Review Office

³⁰⁹ *Ibid.*

³¹⁰ 'Treaty of Waitangi' (2018), Manatū Taonga Ministry for Culture and Heritage

the Waitangi Tribunal provides a forum for hearing cases on violations of the Treaty dating back to 1840.³¹¹

In education, the Treaty is reflected through New Zealand's dual National Curriculum. The New Zealand Curriculum (NZC) lists the Treaty of Waitangi as one of eight principles schools should use as they customise the NZC for their own learning communities, and an approach to learning grounded in Māori language and culture is honoured through the Māori-medium *Te Marautanga o Aotearoa* (detailed in the section "New Zealand's Curricular Frameworks" below).

The spirit of the Treaty is often framed in terms of the "3 P's": partnership, protection, and participation. School leaders and teachers ought to partner with Māori communities and understand Māori places as they plan for learning; protect Māori interests, values, and tāonga within the school community; and involve Māori communities in school decision-making processes.

Partnerships, protection, and participation can take many forms. A 2011 report of the Education Review Office (ERO) found that schools upholding the Treaty exhibited practices such as the following:³¹²

- Valuing and promoting te reo Māori me ōna tikanga in school management and in teaching and learning, for example, through pōwhiri, karakia, and kapa haka;
- Giving all students have the opportunity to learn te reo Māori and to understand and celebrate the place of Māori as tangata whenua in Aotearoa New Zealand; and
- Establishing relationships with students, parents, whānau, iwi, and other community members support Māori students' learning.

While schools have increasingly made strides to engage with Māori communities, the quality of interactions and engagement is still evolving. Recent reflection from researchers at the University of Waikato has emphasised that the "partnership" element of the Treaty has been primarily defined by the majority European group at the expense of deeply understanding the Māori view of "mana ōrite" – a metaphor for interdependent relationships that preserve the mana (prestige) of both sides:³¹³

Many efforts to be culturally responsive to, or for, Māori have, at best, been understood by Māori students as first steps or, at worst, tokenism...Shifting the focus from being responsive to the culture of others to developing and being part of cultural relationships with others, legitimates the aspects of culture that are less tangible but fundamental to the identity and wellbeing of all people.

An essential challenge of this paper, then, is to uphold the principles of the Treaty of Waitangi by ensuring Western perspectives of knowledge, skills, and success criteria are considered alongside the perspectives and lived experiences of Māori students and whānau (families) as well as the diverse cultures of Pasifika, Asian, Middle Eastern, and African students that attend New Zealand schools each day.

Governance: School management and autonomy

Since the Tomorrow's Schools Reforms of 1988 led to the Education Act of 1989, schools in New Zealand have operated with a great deal of autonomy in one of the most highly devolved education systems in the world.

The Education Act of 1989 created the current Ministry of Education and replaced the Department of Education. The Department of Education sat on top of a three-tiered system of governance that included regional boards followed by individual schools. Funding levels were established nationally, and education boards made all staff appointments – principals "had no say" into the process of hiring teachers.³¹⁴ Resource decisions were highly centralized – for example, one interviewee recalled the time when "you'd get a set amount of art supplies for your school, whether or not you even needed or asked for them."³¹⁵

A 1988 taskforce published *Administering for Excellence*, commonly known as "The Picot Report", and identified serious weaknesses in this structure. The task force recommended a two-tiered system

³¹¹ 'Treaty of Waitangi' (2016), Ministry of Justice

³¹² 'The New Zealand Curriculum Treaty of Waitangi Principle' (2012), Ministry of Education

³¹³ Berryman, M, Lawrence, D., and Lamont, R. (2018)

³¹⁴ 'Briefing Note: Background reading for a review of Tomorrow's Schools' (2017), Ministry of Education

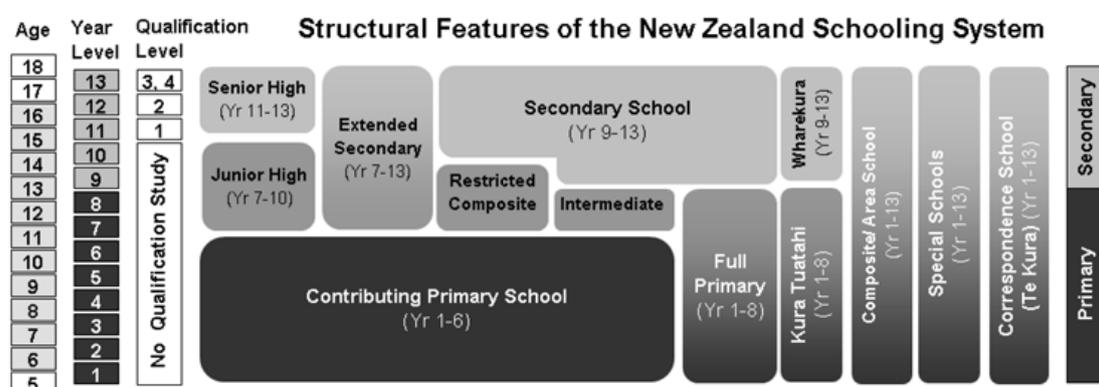
³¹⁵ Author interview, 28 May 2018

abolishing regional boards, effectively leaving the Ministry of Education and a system of schools engaged in site-based management through locally elected boards of trustees.³¹⁶

Since that time, New Zealand schools have operated on a self-managed basis: boards of trustees made up largely of parents employ principals, and each school manages its finances and interprets the national curriculum on its own accord. New Zealand schools can be organised quite differently: in some areas they are segmented into primary, intermediate, and secondary schools (Figure A2). In more rural areas, schools may be comprehensive, including students from Years 1-13. This type of structure is often found among Māori medium schools, in which te reo Māori (the Māori language) is the predominant language of instruction and a Māori-medium curriculum is followed.

While self-managing schools allowed for greater flexibility and autonomy for schools, in recent years the system has been criticized for increasing competition among schools; leaving rural or low-decile schools ill-equipped with resources and support; and facilitating a piecemeal approach to improvement investments.³¹⁷ In 2018 the newly elected Labour government began a review of the Tomorrow's Schools Reforms, with a task force set to offer recommendations in November 2018. A significant component of that work will likely involve reflecting on the various agencies at work in the sector, detailed in the section that follows.

Figure A2: School types within the New Zealand education system³¹⁸



The Ministry of Education and key education actors

The education sector in New Zealand comprises a diverse mix of government organisations, service providers, school-based roles, and parent and community groups. This section provides an overview of key agencies and organisations, their primary functions, and some of their current priorities and trends. It is not an exhaustive list but should provide readers with a general background on the many factors that end up influencing the climate in which academic, social, and emotional skills develop among students.

The Ministry of Education (MoE) serves as the government’s lead advisor on the education system in New Zealand. The MoE describes its purpose as shaping “an education system that delivers equitable and excellent outcomes.”³¹⁹

The MoE provides the majority of funding to all state schools, develops curriculum and manages school property portfolios. The MoE also develops strategic policy for the tertiary sector.

Looked at through a comparative lens, there are a number of significant differences between the American context and the national role of the MoE, including:

- **Curriculum and governance:** There are no school districts in New Zealand, and regional bodies like state legislatures do not set curricular standards. New Zealand’s roughly 2,500 schools base their local curriculum on a national framework set by the MoE in consultation with the education sector and the local community. Each school makes its own decisions on how to

³¹⁶ Openshaw, R. (2014)

³¹⁷ Wylie, C. (2012)

³¹⁸ OECD (2012)

³¹⁹ ‘Our Purpose and Vision’ (2017), Ministry of Education

implement the national curriculum through a strategic plan, local curriculum, instructional materials, timetable, and professional development priorities.

- **Teacher pay:** Teacher pay is managed centrally by the MoE. Schools do not determine how much to pay individual teachers, and teacher pay is consistent regardless of region. In the United States, teacher pay varies district by district within states, and can vary significantly across states.
- **Regional support:** In 2016, a restructuring effort led the MoE to operate 10 local offices across the country. These do not function as independent school districts, as in the United States. Local offices support individual schools as representatives of the Ministry.
- **Professional learning:** The MoE funds professional learning opportunities for schools but does so on a case by case basis through an application process. This change followed an evaluation of professional learning and development (PLD) that began in 2013 and sought to make the operating model for centrally-funded PLD more effective, making a bigger difference in student outcomes and strengthening professional relationships.³²⁰ PLD priorities remain broadly defined and framed around a few learning areas of the national curriculum – pāngarau/math, pūtaiao/science, te reo matatini (pānui, tuhituhi, kōrero), reading and writing and digital fluency.³²¹ Many PLD efforts are funded by the Ministry but carried out by accredited service providers. Schools purchase PLD from their Crown-provided operational budgets at their own expense.
- **Implementation mandates:** Given a tradition of self-management brought by 1989 reforms, schools are the primary drivers of pedagogical and course design policies that districts may determine in the United States. Whereas an American school district may require “tight” implementation guidelines on scheduling, instructional resources or classroom practices, the MoE’s role is often limited providing funding for specific programs or disseminating information on best practices. That leaves uptake decisions to schools. For example, on the issue of whether to stream (i.e. track) students into classes, a MoE official once remarked:³²²

We can influence [schools]. We publish Pisa. We identify that we have high levels of same-ability grouping ... Then it really is for the profession to take hold of that and say, ‘Should we really be doing that?’

It should be noted that changes in government brought on by electoral cycles can trigger sizable shifts in policies implemented by the MoE. While writing this paper, a Labour-led coalition took charge of government after the 2017 election cycle, appointing a new Minister of Education ready to execute “an ambitious 3 year work plan for the education portfolio that will set our country up for the next 30 years.”³²³ Minister Chris Hipkins immediately acted on an education platform that included removing National Standards reporting and assessment in K-8 schooling; setting up a review of the secondary school qualifications system; and providing a year of fees free tertiary education for all students who finish school in 2017.³²⁴

Even as leadership shifts occur in step with election cycles, the vast majority of MoE employees continue with the task of coordinating efforts to improve performance in the sector. But managing complexity remains a challenge.

Additional agencies: ERO, NZQA, and the Education Council

The Ministry of Education works alongside with multiple independent government agencies in order to ensure school quality. A few of the more critical agencies impacting secondary schools include the following:³²⁵

- The Education Review Office (ERO) provides reviews of school quality, visiting schools every 1-5 years depending on the state of performance observed. The office also provides national reports on education issues in New Zealand

³²⁰ ‘Why have we changed PLD’ (n.d.), Ministry of Education

³²¹ ‘PLD Programmes’ (n.d.), Ministry of Education

³²² Collins, S., (2017)

³²³ Hipkins, C. (2018)

³²⁴ ‘Details of fees free tertiary education and training for 2018 announced’ (2017), Ministry of Education

³²⁵ ‘Education Agencies’ (2018), Ministry of Education

- The New Zealand Qualifications Authority (NZQA) serves as the certification body for educational attainment in the country, which includes managing the Record of Achievement (ROA) of each student in New Zealand. NZQA also visits schools to ensure a robust assessment programs through managing national assessment (MNA) reviews
- The Education Council for Aotearoa New Zealand provides professional leadership for the teaching profession, including setting guidelines for the 156 approved Initial Teacher Education programs across 25 providers located throughout the country³²⁶

In practice, a principal might experience the following: new teachers are hired out of university programs which take their guidelines from the Education Council. Those teachers build courses in secondary schools based in part on individual standards written by the NZQA. Guidelines for assessing those standards are set by the NZQA, which also builds and administers external exams (e.g. 3-hour, year-end tests). Those standards and exams are aligned with the New Zealand Curriculum, which is stewarded by the MoE. And ERO then evaluates the whole picture – support and planning processes for teachers, equity in student outcomes and strategies for priority learners, engagement with communities, etc.

Outside of government, the New Zealand Council on Educational Research (NZCER) operates under the NZCER Act of 1972 and provides additional research on system performance.³²⁷ And the MoE accredits over 500 service providers through centrally funded PLD.

In a number of ways these agencies shape and influence the conditions under which teachers approach learning with their students.

Boards of trustees

Every three years, the parents of students at each New Zealand school elect a Board of Trustees to manage the school and determine its strategic direction. Boards have the ability to allocate school finances, hire and fire staff, and monitor student progress, among other responsibilities. Boards are typically comprised of up to 5 locally elected officials and include the principal, a staff-elected representative, and a student representative at the secondary level. Local communities elect boards every 3 years.³²⁸

In 2016, the last round of elections, 560 of roughly 2,500 New Zealand schools did not hold elections because nominations for board positions were less than or equal to the number of positions available on the board; in such cases, board members are simply appointed. The 70 per cent of schools that did hold elections in 2016 compares favourably to the 2013 elections, when 53 per cent of schools held a vote. Board members are paid \$55 per meeting for up to 11 meetings per year.³²⁹

According to the New Zealand School Trustees Association, board responsibilities include, but are not limited to, the following:³³⁰

- set and, as needed, modify the vision, mission, and values of the school
- ensure a sensible and feasible strategic plan
- approve and monitor the annual plan
- monitor and evaluate student learning outcomes
- appoint, assess the performance of, and support the principal
- provide financial stewardship
- oversee, conserve, and enhance the resource base
- approve major policies and programme initiatives
- build a broad base of community support
- exercise governance in a way that fulfils the intent of the Treaty of Waitangi by valuing and reflecting New Zealand’s dual cultural heritage

In practice, however, the delegation of responsibilities between board members and principals varies widely across schools. For example, while performance management is a legal responsibility of the

³²⁶ *Initial Teacher Education Providers* (n.d.), Education Council

³²⁷ ‘About NZCER’ (n.d.), New Zealand Council for Educational Research

³²⁸ ‘Your School Board of Trustees’ (n.d.), Ministry of Education

³²⁹ Walters, L. (2016)

³³⁰ ‘Board Responsibilities’ (n.d.), New Zealand School Trustees Association

board, a recent survey identified that nearly 1 in 4 principals noted that they take full responsibility for the process.³³¹

Principals

Principals are the primary leaders of the education system at the school level, responsible for everything from financial planning and budgeting to instructional leadership. In practice the role of the principal can vary significantly depending on school size. At smaller schools I visited principals spent portions of their day working directly with teachers, and in some case even teaching classes themselves; at larger schools, principals took on more of a coordinating role across departments, often designating significant portions of instructional leadership to Deputy Principals.

One of the Minister's current reviews focuses on strategies for reducing the administrative workload of both teachers and principals.³³² A 2016 working group representing secondary teachers found:³³³

There is a range of administrative work associated with (secondary) teaching, leadership and pastoral care, including reporting, meetings, data collection, management and analysis, surveys, parent contact, health and safety, organising relief, photocopying, NCEA administration tasks (e.g. record keeping, data analysis), appraisal and registration requirements, special education applications, IT management and support... These [tasks] are often delegated from the principal to senior leaders to departments and middle leaders and teachers.

In my own interviews asking about the demands of the principal job, the most common response from principals on the most difficult aspect of the learning curve focused on financial management. As one principal noted at a medium-sized secondary school, "You're never trained for the financials. In theory the Board can help, but our Board doesn't have a lot of professional background."³³⁴

An additional concern expressed by some interviewees was the nature of hiring principals. As one principal noted, "Boards tend to hire those they know and are comfortable with, not necessarily the best person for the job."³³⁵

Teachers

At the secondary level, teachers become certified in specific subject areas and work with students from Years 9-13. Larger schools are typically organised into subject-specific departments, and the Head of Department is often responsible for leading the inquiry work of colleagues into effective pedagogical practice. At smaller schools, or some of the newer schools I visited, departmental structures may not be as rigid. In any case, teachers either build or select the instructional materials for use in the classroom, a practice that differs significantly from many American school districts in which district managers lead the process of selecting common textbooks and course materials.

Teacher certification

Guidelines for teacher certification and renewal of teacher licensing through appraisal are set by the Education Council.

Teachers engage in a two-tiered process for entering and staying in the profession: registration and continuing certification. To become a registered teacher, candidates must complete an Initial Teacher Education (ITE) qualification, typically completed at university, followed by a two-year induction and mentoring period. Once an application for registration is approved, teachers receive a practising certificate that lasts three years.

There are two sets of standards and one set of "Practising Criteria" involved in registration, ongoing certification, and collective bargaining, a situation the Education Council refers to as "not ideal."³³⁶ In

³³¹ Anderson, C. (2009), p. 12

³³² Collins, S. (2018b)

³³³ Wastney, M. (2018)

³³⁴ Author Interview. 17 May 2018

³³⁵ Author Interview. 21 May 2018

³³⁶ 'Frequently Asked Questions' (n.d.), Education Council

an attempt to clear confusion, the Education Council publishes a matrix aligning three sets of guidelines across primary and secondary levels.³³⁷

Teacher unions, teacher pay, and a teacher shortage

Teachers are represented in one of two trade organisations – the Post Primary Teachers Association (PPTA) or the New Zealand Education Institute/Te Riu Roa (NZEI). NZEI counts 50,000 members composed of primary, area, and support staff who work as teachers, principals, or support staff.³³⁸ The 17,000 members of PPTA include teachers in secondary schools, area schools, technology centres, and community education centres.³³⁹

The Ministry of Education negotiates teacher pay every 3 years with respective unions. Teachers must demonstrate they have met professional standards in order to progress up a salary scale, a responsibility given to a school's board of trustees that is typically delegated to a principal. Salary scales for secondary school teachers start at approximately \$51,000 NZD and progress up to \$78,000 NZD after 7 years of service, though teachers may add to their income through additional responsibilities.

Compared to other OECD countries, New Zealand teachers rank in the Top-5 in terms of teacher professionalism, giving the profession good standing internationally.³⁴⁰ However, the number of those looking to go into teaching is on a downward trend. When the Labour government took over in 2018, fewer teachers were looking to go into the profession, and many schools in urban areas such as Auckland reported not being able to fill positions.³⁴¹ Between 2010 and 2016, the number of those training to become teachers dropped from 14,585 to 8,895, with secondary trainees dropping from 1,865 to 1,120.³⁴² At the same time, the teacher workforce continued to age with a looming retirement of baby boomers, and New Zealand's population grew by 400,000 people.³⁴³

Parents

Parents engage in the New Zealand system in a variety of ways. They comprise the pool of candidates for elected positions on the boards of trustees, giving them considerable voice in the strategic management of local schools. They provide public comment on proposals set forth by the Government, and in 2018 served as a key audience for the Government's National Education Summits in Christchurch and Auckland.

Parents can also play a critical role in funding, depending on the school. For example, some schools set up "volunteer donations" in order to buffer their operating budgets, with wealthier schools receiving about \$324 per student compared to \$56 per student for lower-income schools.³⁴⁴

Many local schools have parent-teacher associations, and the National Parent Teacher Association can serve as a resource for these organisations.

A 2018 Education Council convening noted the unique influence parents can play in directing focus to the key competencies:³⁴⁵

There is a need for parent and whānau education about future work and skills alongside the profession's curriculum and qualification discussions. Parents and whānau have expectations about what a successful educational outcome is, largely based on their own experiences with education.

Students

Students attend schools and have representation on their school's board of trustees at the secondary level. In that role, a student representative can weigh in on various policies and priorities at the school level.

³³⁷ *Matrix aligning Standards for the Teaching Profession with Professional Standards (Secondary: Fully Certificated teacher) and the Practising Teacher Criteria* (n.d.), Education Council

³³⁸ 'About Us' (n.d.), New Zealand Education Institute Te Riu Roa

³³⁹ 'About PPTA' (2018), Post Primary Teachers' Association

³⁴⁰ 'NZ teachers rank high in professionalism' (2016). *Radio New Zealand*

³⁴¹ 'Teacher shortage: Three vacancies, one applicant', (2018). *Radio New Zealand*

³⁴² Barback, J. (2018)

³⁴³ *Ibid.*

³⁴⁴ Edwards, B. (2016)

³⁴⁵ Education Council symposium (2018)

At the national level, 12 students currently work directly with the Minister for Education through the Ministerial Youth Advisory Group. And through an online forum, any 14 to 18 year-old in New Zealand can provide additional feedback on the work of that Youth Advisory Group.³⁴⁶

In New Zealand's curricular frameworks, students are acknowledged to be at the centre of the learning process, meaning that instructional decisions should be made in a responsive manner – taking into account students' cultural backgrounds, communities, and academic strengths and challenges. An overview of those frameworks can be found below.

The National Curriculum: New Zealand's bicultural curricular approach

Schools in New Zealand follow a national guiding document dependent on the language of instruction and character of a school. Māori-medium schools follow *Te Marautanga o Aotearoa* and teach at least 51 per cent of their courses in te reo Māori. English-medium schools can offer te reo Māori but generally follow the English-medium New Zealand Curriculum. At the pre-school level, *Te Whāriki* serves as the guiding framework, though discussion of it is beyond the scope of this paper.

In practice, schools educating secondary students might refer to either *Te Marautanga* or the NZC to guide instructional planning; for example, principals of two Māori-medium schools I visited reported that math teachers who are not fluent in te reo use the NZC to plan instruction.³⁴⁷

The primary function of either curriculum is to “set the direction for student learning and to provide guidance for schools as they design and review their curriculum.”³⁴⁸ And it is important to note that both *Te Marautanga* and the New Zealand Curriculum function as a framework for reference for schools rather than a detailed, annualized plan of instruction. Schools and teachers are expected to use their own judgment as well as the needs of particular students and communities to ensure that teaching and learning “is meaningful and beneficial to their particular communities of students.”³⁴⁹ In practice then, curriculum design and review occurs at 3 levels - the national level, school level, and classroom level.

The New Zealand Curriculum in English

Between 1961 and 1986, a series of documents outlined the curriculum that New Zealand students should follow, organised by subject areas and years of study. The documents prescribed what teachers should teach in each subject and year level. According to a Ministry of Education review, there was “no overarching approach to their development and no coherent vision or purpose.”³⁵⁰

A more outcomes-focused approach to curriculum took root in the 1990s, including key principles, essential learning areas, skills, attitudes and values, and national achievement aims. Between 2000 and 2007, the MoE developed the current national curriculum, known as the New Zealand Curriculum. After trials in schools, collaborative working parties, and online discussions, the Ministry of Education published a draft curriculum in 2006, receiving over 10,000 submissions of feedback for final revision. The current curriculum has been in use since 2007.

The New Zealand Curriculum specifies eight learning areas: English, the arts, health and physical education, learning languages, mathematics and statistics, science, social sciences, and technology. It also includes a vision for education, principles for curricular decision-making, values to be encouraged, and key competencies to be demonstrated in all learning areas. The key competencies, of course, serve as the focus for this paper.

***Te Marautanga o Aotearoa*: The Māori-medium curriculum**

Māori-medium schools use *Te Marautanga o Aotearoa* as their primary curriculum framework. As of June 2018, 11,202 students attended 112 Māori-medium schools, which tend to serve both older and younger students; 52 Māori-medium schools taught secondary students, with 47 of them enrolling students in Years 1-13.³⁵¹

³⁴⁶ ‘My Education My Voice’ (2017), Ministry of Education

³⁴⁷ Author interviews, March 2018.

³⁴⁸ *The New Zealand Curriculum* (2007)

³⁴⁹ *The New Zealand Curriculum* (2007), p. 37

³⁵⁰ ‘Briefing Note: Background reading for a review of Tomorrow’s Schools’ (2017), Ministry of Education

³⁵¹ ‘Māori Medium Schools’ (2018), Ministry of Education

Given these numbers, the vast majority of educational experiences in New Zealand tend to begin with teacher planning from the New Zealand Curriculum. And work to support both curricular frameworks with resources and professional learning is an ongoing challenge. As participants from across the sector noted in a symposium in April 2018, “In relation to English medium, Māori medium is often given two options: catch up or copy. Genuine co-construction is needed.”³⁵²

Still, *Te Marautanga* represents a significant achievement in valuing indigenous perspectives and culture in a bilingual society. It provides a holistic approach to teaching and learning that is often different from that found in Western educational settings. One discussion of how *Te Marautanga* draws on indigenous epistemology noted the following observations:³⁵³

While Western science and education tend to emphasise compartmentalized knowledge which is often de-contextualized and taught in the detached setting of a classroom or laboratory, indigenous people have traditionally acquired their knowledge through direct experience in the natural world... Western thought also differs from indigenous thought in its notion of competency. In Western terms, competency is often assessed based on predetermined ideas of what a person should know, which is then measured indirectly through various forms of ‘objective’ tests. Such an approach does not address whether that person is actually capable of putting that knowledge into practice.

Further discussion of the differences between *Te Marautanga* and the NZC is beyond the scope of this paper, but one final distinction is worth noting. The key competencies of the NZC are meant to be able to translate across cultural contexts. However, for a nuanced analysis of the viability of that prospect, I would refer readers to the 2008 journal article by McFarlane et al, titled “Indigenous epistemology in a national curriculum framework?” A quick visual from that work mapping the key competencies to constructs from a Māori worldview can be found in Figure A3; however, it should be stressed that the key competencies are not referenced explicitly in *Te Marautanga*.

Figure A3: Comparison between key competencies of the NZC and He Tikanga Whakaaro³⁵⁴

Key competencies (Ministry of Education, 2005)	He Tikanga Whakaaro (Grace, 2005)
1 Thinking	1 Tātaritanga
2 Making meaning	
3 Relating to others	2 Manaakitanga
4 Managing self	3 Rangatiratanga 4 Whanaungatanga
5 Participating and contributing	
	5 Whaiwāhitanga

Accountability: Standards, assessment and delivering results

The accreditation of learning for secondary school students occurs through the National Certificates of Educational Achievement (NCEA), a standards-based qualification system. Primary, intermediate, and early secondary students do not engage in the NCEA system, meaning that its influence tends to drive work in Years 11-13 of secondary schools.

NCEA credits in secondary schools are awarded at Levels 1, 2, and 3. In practice, many schools offer courses on NCEA Level 1 topics in Year 11, Level 2 topics at Year 12, and Level 3 topics at Year 13, though technically this is not required. Attaining NCEA Level 3 credits is a pre-requisite for university programs; therefore, NCEA Level 2 attainment is analysed in a similar fashion to American high school graduation rates.

NCEA is widely regarded as a flexible system that has made great strides in providing a variety of options for student study and careers as well as succeeding in reducing the numbers of students that leave school early; however, as researchers have noted, “it is not altogether clear whether the increase in qualifications

³⁵² Education Council symposium (2018)

³⁵³ McFarlane and others (2008), p. 107

³⁵⁴ McFarlane and others (2008), p. 11

attainment always represent an improvement in the learning of what we might call ‘knowledge that matters or ‘powerful knowledge.’”³⁵⁵

The development of NCEA did not occur in lock-step with the development of the New Zealand curriculum

The initial implementation of the NCEA system occurred from 2002 to 2004, though the current version of New Zealand Curriculum was not updated until 2007. As one review notes: ³⁵⁶

NZC was designed to provide a framework on which teachers could build their own local curricula. NCEA was designed as a modular-assessment system, in which different assessment standards can be mixed and matched to design assessment programmes for courses that meet the learning needs of specific groups of students.

In part because of different release timelines, many secondary teachers got into the habit of building curricula around achievement objectives rather than considering the whole of the New Zealand Curriculum. As one researcher put it, “the purposes for learning were all too often articulated in terms of credits to be gained.”³⁵⁷

A former teacher and MoE employee pointed out in one of my interviews that while the New Zealand Curriculum is widely supported by teachers, there are still some that may not have incorporated it into practice, saying “There are secondary teachers who have been working for years that have never taken a good look at the New Zealand Curriculum.”³⁵⁸ Partly because achievement standards and the NZC developed separately, many teachers feel that the alignment between the two is suspect: for example, only half of teachers polled in the 2012 National Survey of Secondary School teachers felt that realigned standards had “captured the intent of the NZC.”³⁵⁹

NCEA credits: a tale of two standards

NCEA credits are awarded for mastery of achievement standards or unit standards, the latter of which are popularly associated with vocational pathways.

Unit standards are always assessed by teachers or employers through a process known as “internal examination” – for example, a student with a job can receive credit for skills demonstrated at work. There is a pervasive feeling in the sector that unit standards are more vocationally oriented and less rigorous than achievement standards, though they may involve work in real world settings with employers and clients.

Achievement standards may be internally assessed, which typically involves a 3-5 week period of study to master a single standard. In that sense, internal assessment occurs throughout the year as students gain credits, a situation that is no small contributor to teacher workload. Achievement standards that qualify students for university entrance, and comprise some of the most rigorous NCEA credits, are typically assessed through “external exams” – a traditional 3-hour end-of-year exam.

Thus universities play a large role in determining the pathways students pursue in high school course selection. For example, a university department may specify the achievement standards that it requires as part of its admissions criteria. If a student hopes to study in that department, he or she must pass an examination demonstrating competency in that standard. As in the United States, university admissions criteria can be a significant driver of both what is taught and how it is taught.

The Record of Achievement

In high school each student builds a Record of Achievement (RoA) that certifies the learning they have undertaken and records the NCEA “credits” that students have achieved. In that sense the RoA is similar to the high school transcript of an American student.

However, a RoA may contain a bewildering number of credits in a vast array of learning areas, a result that likely contributes to NCEA being regarded as “one of the most complicated school qualifications

³⁵⁵ Hipkins, R., Johnston, M. and Sheehan, M. (2016), p. 5

³⁵⁶ Ibid. p. 154

³⁵⁷ Ibid. p. 151

³⁵⁸ Author Interview, 28 June 2018

³⁵⁹ Hipkins, R., Johnston, M. and Sheehan, M. (2016), p. 165

systems in the world.”³⁶⁰ Rather than seeing a grade for “algebra”, for example, an employer or university admissions officer could review the actual standard mastered by a student. The advantage of specificity of student mastery comes with the challenge of complexity and the possibility that students build very different bodies of knowledge even within a single discipline. There are 737 credits available for literacy and numeracy under the NCEA system, and criticism has been lobbed that some of those can be met through physical education classes.³⁶¹

Challenges in the current paradigm

Course offerings, rigour for all, fair grading practices, and appropriate evidence

Overall, while NCEA has been praised by students, parents, and educators for its flexibility, there are risks inherent in that structure, particularly at lower decile schools.

For one, schools must be strategic about offering NCEA credits that enable students to go on to university and career pathways, a task that can be challenging given the number of standards available for course of study. Another challenge can simply be students lacking awareness of the consequences of choosing pathways with a high probability of success, but potentially low rate of return after high school. For example, a 2009 study of 4 mid-to-low decile secondary schools concluded:³⁶²

Students tend to be “street smart” in their knowledge of the NCEA system, seeking to maximise credit gains, but are not always aware of the longer-term significance of their choices. Avoidance of achievement standards and external assessments can lead to students not meeting the prerequisites for more advanced study, missing out on important content areas in a subject, and jeopardising their chances of gaining the UE qualification or the level of achievement needed for tertiary study in a field of their choice.

Second, a particular challenge exists in ensuring a high level of rigour in the pathways of all students and avoiding bias in structuring student course pathways:³⁶³

There is evidence that Māori and Pacific students (clustered in lower decile schools) tend to be enrolled in “alternative” versions of core subjects such as mathematics, and in other “applied” subjects made up mainly of unit rather than achievement standards... There is also evidence from current Starpath research that Māori and Pacific students tend to take fewer subjects and complete fewer credits from the approved list of subjects.

Given that research has shown Pasifika students who qualify to enrol in university are more likely to enrol than NZ European counterparts, it is essential to keep expectations and opportunities for Māori and Pacific students at high levels.³⁶⁴

Third, schools must ensure that when scoring internal assessments they do so fairly. As with course selection patterns, some evidence suggests teachers may not hold the same expectations for Māori and Pacific students as they do for other groups. For example, a recent study found “priority learners received systematically lower teacher judgments than other students in 2012 and 2013, even when their standardised achievement was the same.”³⁶⁵

Finally, schools must ensure that the learning experiences they create for students truly challenge and support them at high levels of rigour. NCEA currently places an emphasis on being able to use “naturally occurring evidence” of student learning. For example, if students read and write extensively in a social studies course, they can receive credits that count towards a literacy requirement. One social studies teacher interviewed for this report described her approach to interdisciplinary credits as follows:³⁶⁶

I worked on a social studies course but put in science credits. I’m not even sure if anyone noticed. The kids did of course. I just want to make sure they get credits for the learning that they’re doing.

In theory, this allows students to obtain credit where credit is due; in practice, a social studies teacher without training in literacy expertise can become the teacher and assessor of literacy standards.³⁶⁷

³⁶⁰ Ibid, p. 6

³⁶¹ ‘School Leavers’ Skills under Fire’, *Radio New Zealand*

³⁶² Madjar, I., McKinley, E., Jensen, S. and Van Der Merwe, A. (2009), p. 6

³⁶³ Madjar, I., McKinley, E., Jensen, S. and Van Der Merwe, A. (2009)

³⁶⁴ Ibid, p. 9

³⁶⁵ Meissel, K. and others (2017)

³⁶⁶ Author interview. 31 May 2018

³⁶⁷ Hipkins, R., Johnston, M. and Sheehan, M. (2016) p. 174

A possible consequence of flexibility in demonstrating knowledge is also the practice of “coaching” students toward patterns of responses that get students NCEA credit with only surface-level knowledge or understanding:³⁶⁸

Coaching in examination-answering techniques is not new of course...what is different in the case of NCEA is that, across a wide range of standards, formulaic response patterns are taken as a proxy for literacy, not just as evidence that the students know the content being examined.

Technology

Infrastructure and access have improved, leading to new possibilities for pedagogical practice

Beginning in 2013, the New Zealand government made it a priority to provide internet access to every school in the country. As of June 2017, more than 99 per cent of New Zealand students and teachers had access to high speed broadband access at school provided by the Network for Learning.³⁶⁹

The uptake of technology-based practice in schools varies depending in part on pedagogical choices. Some schools visited for this project operated in an almost paperless environment; others only deployed technology on a sparing basis. A considerable driver in that decision can come from the board of trustees and parent community of the individual school.

When a school does decide to use technology across learning areas, devices are often supplied in part by parents through Bring Your Own Device (BYOD) schemes. But device policy varies in part by the decile level of schools. On a 2015 national survey of secondary school teachers, the most recent survey of its type available, 24 per cent of decile 1-2 teachers reported that their school used a BYOD policy compared to 66 per cent of decile 9-10 teachers.³⁷⁰

Figure A4: Student access to digital technology at secondary schools (2015)

Access	Teachers (n = 1,777) %
The school provides devices that students share (e.g., in a computer lab, or spread around the school)	72
Students can use their BYOD devices in the courses I teach	65
We are a BYOD school	53
The school provides devices that are used only in some courses	15
Other	8
The school provides each student with a device	2

Data from network usage indicate that the managed network is most often used to search for information rather than consume it. From 2015 to 2017, “growth in searches and education [outstripped] growth in streaming video” (Figure A5).³⁷¹

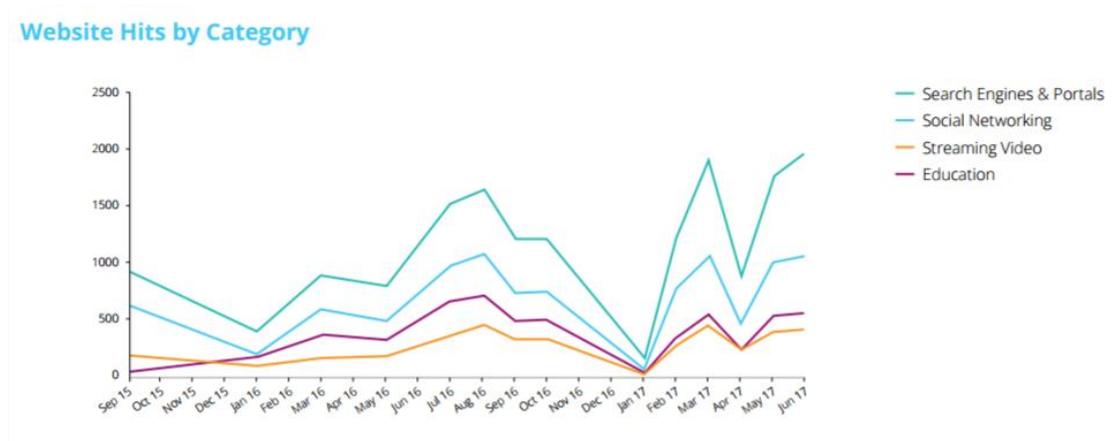
³⁶⁸ Hipkins, R., Johnston, M. and Sheehan, M. (2016), p. 173

³⁶⁹ Annual Report (2017), Network for Learning

³⁷⁰ Wylie, C. and Bonne, L. (2015), p. 34

³⁷¹ Annual Report (2017), Network for Learning

Figure A5: Website hits by category



Schools visited for this study had mixed reviews on student readiness for use of technology in the classroom. In a low decile school, one principal highlighted the importance of developing students' technological fluency:³⁷²

Our kids are shy around computers, they don't know where the back button is on a browser, some of them. And some of them struggle to read and write. So basic literacy and basic digital literacy both need to be a focus for us.

On the other hand, several principals at the secondary level remarked that students coming in from primary schools steeped in technology had lost some basic fundamentals present in traditional classrooms. "We have students coming in now that aren't quite sure how to hold a pen or pencil anymore," noted a principal of a Boys secondary school.³⁷³

Complexity and implementation

Why outline the fundamental components of the New Zealand education system? Because the practice of teaching occurs against a complex backdrop of policies and priorities determined by parents, principals, school boards, universities, government agencies, and service providers.

- The Treaty of Waitangi provides a founding set of principles that mean a diverse set of perspectives need to be taken into account in developing educational policy and practice in New Zealand schools.
- Secondary schools operate in a complex environment in which the Ministry of Education coordinates the sector overall and stewards the curriculum in particular; the New Zealand Qualifications Authority builds assessments and standards for that curriculum; the Education Review Office reports on school quality; the Education Council sets standards for the teaching profession and training providers; and separate boards of trustees made up mainly of parents set the strategic direction for each of the country's 2,500+ schools.
- The National Curriculum (in English and te reo Māori) serves as a framework that schools use to guide instruction, but in practice at secondary schools the NCEA qualifications system drives many of the pedagogical choices of Year 11-13 teachers.
- Overall, New Zealand students perform above international averages and approach an 85 per cent rate of leaving school with qualifications, but recent downward trends in international performance and studies on literacy and numeracy raise questions about the quality of qualifications students are earning.

All in all, for any deep rooted change to take place in the sector, a large number of separate actors must align on the rationale for that change and coordinate efforts to support it.

³⁷² Author interview. 21 May 2018.

³⁷³ Author interview. 25 June 2018.

APPENDIX 2: SUMMARY OF NZ EDUCATION INDICATORS

Indicator ³⁷⁴	Indicator Level	Trend relative to previous years
Annual Expenditure per Student	Primary: \$7,354 (USD) Secondary: \$10,198 (USD)	Against 31 OECD countries, New Zealand's annual expenditures are below the mean in primary school and above the mean for secondary school
School Leavers with NCEA Level 1	In 2016, eighty-nine percent of school leavers achieved at least NCEA Level 1 and ninety-one percent achieved NCEA Level 1 literacy and numeracy	 Since 2009 (80.9 per cent), there has been a 8.5 percentage point increase with respect to those who attain at least NCEA Level 1 or equivalent. Compared to 2015, there has been a 0.6 percentage point increase in the proportion of school leavers who attain at least NCEA Level 1 or equivalent.
School Leavers with NCEA Level 2	Eighty percent of school leavers achieved NCEA Level 2 or above in 2016.	 In 2016, 80.3 per cent of all school leavers attained at least NCEA Level 2 or equivalent, a 0.7 percentage point increase on 2015. Since 2009, there has been a 12.8 percentage point increase with respect to those who attain at least NCEA Level 2 or equivalent, with 80.3 per cent in 2016 compared to 67.5 per cent in 2009.
School Leavers with NCEA Level 3	Fifty-four percent of 2016 school leavers achieved at least an NCEA level 3 qualification.	 In 2016, 53.9 per cent of all school leavers achieved level 3 or above. This is an improvement of 0.7 percentage points on 53.2 per cent in 2015. Since 2009, there has been an increase of 12.0 percentage points in the proportion of school leavers who achieve level 3 or above, with 53.9 per cent in 2016 compared to 41.9 per cent in 2009.
Retention of students in senior secondary schools	In 2016, 83.6 per cent of students remained at school to their 17th birthday.	 There has been a 4.3 percentage point increase in this number since 2009 (79.3 per cent) and there has been a 1.0 percentage point decrease since 2015 (84.6 per cent). Māori students displayed the largest improvement in the proportion of students remaining at school until age 17 since 2009 with an 8.3 percentage point increase.
18-year olds with minimum of NCEA Level 2 or above	84.6 per cent of New Zealand 18-year old's possess a Level 2 qualification	 From 2015 to 2016 the percentage of 18-year-olds with a minimum of NCEA Level 2 or equivalent has increased by 1.3 percentage points, reaching 84.6 per cent.
Mathematics literacy achievement: senior secondary schooling	Between 2003 and 2012, New Zealand's average 15-year-old student performance in mathematical literacy declined noticeably from 523 to 500 (23 points).	 New Zealand continues to perform above the OECD average in mathematical literacy at the senior secondary level, but has declined markedly in mathematics performance in recent years.

³⁷⁴ 'Indicators' (n.d.), Ministry of Education

Reading literacy achievement: senior secondary schooling	Between 2000 and 2012 there has been a significant drop in New Zealand's average 15 year-old student performance in reading literacy. Most of this decline happened between 2009 and 2012.	 New Zealand showed a decline in reading literacy performance at the senior secondary level, though only five out of 34 OECD countries achieved significantly higher mean scores than New Zealand.
Science Literacy Achievement: Senior Secondary Schooling	In PISA 2012, New Zealand performed above the OECD average in science (516 compared to 501).	 Despite a recent decline in science literacy performance at the senior secondary level, New Zealand is still performing above the OECD average.
School leaver destinations: tertiary education	In 2015 there were 60,600 domestic school leavers. Of these, 60.3 per cent (36,500 students) had enrolled in tertiary education at all levels by the end of 2016.	 This continues a slight downward trend in the proportion of school leavers progressing directly to tertiary education that started with the 2014 leaver cohort.
Students attending school regularly (students attending more than 90 per cent of Term 2, time = half days)	In 2017, the percentage of students attending school regularly was 63.0 per cent, a decrease of 4.2 percentage points from 2016.	 The 2017 percentage was low compared with the previous five years, which ranged from 66.3 per cent up to 69.5 per cent. The percentages of Māori (50.0 per cent) and Pasifika (51.7 per cent) students attending school regularly are significantly lower than that of European/Pākehā (66.5 per cent) and Asian (73.4 per cent) students.

APPENDIX 3: KEY COMPETENCIES AND ENTERPRISING ATTRIBUTES³⁷⁵

Enterprising Attributes	What they mean for students
Thinking	
1. Generating, identifying and assessing opportunities.	Thinking up new things to do and deciding if they are good ideas.
2. Identifying, assessing and managing risks.	Thinking of the things that could go wrong with an opportunity and making plans and decisions to limit that risk.
3. Generating and using creative ideas and processes.	Thinking up new ideas and ways to do things that work well.
4. Identifying, solving and preventing problems.	Looking ahead for things that can go wrong, thinking of ways to solve problems and planning ahead to avoid them.
5. Monitoring and evaluating.	Checking all the time and making changes if they are needed.
Managing Self	
6. Using initiative and drive.	Seeing what needs to be done and doing it, persevering when things get tough and showing determination to keep going.
7. Matching personal goals and capabilities to an undertaking.	Using your own skills and abilities to get things done and achieving your goals.
Relating to Others	
8. Working with others and in a team.	Listening to others, encouraging people to take part and sharing the responsibilities.
9. Negotiating and influencing.	Being persuasive, resolving issues, backing up ideas and reaching agreement with others.
10. Being fair and responsible.	Taking ownership of your own actions while considering what is right for others.
Participating and Contributing	
11. Planning and organising.	Making a decision, making a plan and getting ready.
12. Identifying, recruiting and managing resources.	Sorting out what resources are needed, getting them and using them in the best way possible.
13. Being flexible and dealing with change.	Dealing with new situations, accepting new ideas, getting over change and moving on.
Using Language, Symbols and Texts	
14. Collecting, organising and analysing information.	Getting information and sorting it to make sense of it.
15. Communicating and receiving ideas and information.	Sharing and taking in ideas from a range of sources.

³⁷⁵ 'Key Competencies – Enterprising Attributes' (2015), Ministry of Education

APPENDIX 4: OCEAN AND FIVE FACTORS UNDERPINNING SOCIAL AND EMOTIONAL LEARNING

OCEAN stands for Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism (or Emotional Stability), and it happens to be the basis on which the OECD’s latest framework on social and emotional learning is built.

It is a generally well-accepted taxonomy in the field of personality psychology that some have argued serves as the “longitude and latitude” of longer lists of social and emotional skills.³⁷⁶ While there are a proliferation of constructs and measures of social and emotional skills, the Five Factor Model (FFM) presented by OCEAN remains an umbrella framework, and “those who disagree [with it] have yet to agree on an alternative.”³⁷⁷

A number of studies highlight correlations between factors in OCEAN and a wide variety of outcomes. For example, Figures 8-10 (Section I of this paper) show how specific factors correlate with years of schooling, course grades, and health outcomes.

It is important to note that the visuals in Figures 8-10 are correlations, and are not necessarily causal. They establish that many of the Five Factors of OCEAN are associated with a host of positive outcomes. In other words, they matter. But while they have predictive value, they may not necessarily *cause* the outcomes that they are associated with. Figure A6 (following page) provides an overview of the each of the five factors as well as their related skills.

³⁷⁶ Kautz, T., Heckman, J. and others (2014)

³⁷⁷ Gaertner, M. and Roberts, R. (2017)

Figure A6: The big five domains and their facets³⁷⁸

Big Five Personality Factor	American Psychology Association Dictionary Description	Facets (and correlated skill adjective)	Related Skills	Analogous Childhood Temperament Skills
Openness to Experience	“The tendency to be open to new aesthetic, cultural, or intellectual experiences”	Fantasy (imaginative), aesthetic (artistic), feelings (excitable), actions (wide interests), ideas (curious), and values (unconventional)		Sensory sensitivity, Pleasure in low-intensity activities, Curiosity
Conscientiousness	“The tendency to be organised, responsible, and hardworking”	Competence (efficient), order (organised), dutifulness (not careless), achievement striving (ambitious), self-discipline (not lazy), and deliberation (not impulsive)	Grit, perseverance, delay of gratification, impulse control, achievement striving, ambition, and work ethic	Attention/(lack of) distractibility, Effortful control, Impulse control/delay of gratification, Persistence, Activity*
Extraversion	“An orientation of one’s interests and energies toward the outer world of people and things rather than the inner world of subjective experience; characterized by positive affect...”	Warmth (friendly), gregariousness (sociable), assertiveness (self-confident), activity (energetic), excitement seeking (adventurous), and positive emotions (enthusiastic)		Surgency, Social dominance, Social vitality, Sensation seeking, Shyness*, Activity*, Positive emotionality, and Sociability/affiliation
Agreeableness	“The tendency to act in a cooperative, unselfish manner”	Trust (forgiving), straight-forwardness (not demanding), altruism (warm), compliance (not stubborn), modesty (not show-off), and tender-mindedness (sympathetic)	Empathy, perspective taking, cooperation, and competitiveness	Irritability*, Aggressiveness, and Wilfulness
Neuroticism/ Emotional Stability	“Predictability and consistency in emotional reactions, with absence of rapid mood changes.” Neuroticism is “a chronic level of emotional instability and proneness to psychological distress”	Anxiety (worrying), hostility (irritable), depression (not contented), self-consciousness (shy), impulsiveness (moody), vulnerability to stress (not self-confident)	Anxiety (worrying), hostility (irritable), depression (not contented), self-consciousness (shy), impulsiveness (moody), vulnerability to stress (not self-confident)	Fearfulness/behavioural inhibition, shyness*, irritability*, frustration, (lack of) soothability, sadness

³⁷⁸ Kautz, T., Heckman, J. and others (2014), p. 10

APPENDIX 5: MAPPING OF RECOMMENDATIONS

Recommendation	Lead organization	Supporting organisations	Importance	Complexity
R1.1: Expand data analysis to gauge how key competencies are monitored	MoE	Schools, NZCER	Medium	Medium
R1.2 Target direct SEL efforts at students ages 13-15	Schools	MoE	Medium	Medium
R1.3 Improve information flows to parents	Schools	MoE	Medium	Low
R2.1 Offer SEL micro-credentials	MoE	Education Council, PPTA, Support providers	High	High
R2.2 Support PLD on the key competencies within disciplines	MoE	Schools, support providers, Education Council	High	Medium
R2.3 Pilot project learning before requiring it	MoE	Schools	Medium	Medium
R3.1 Build timetables to support teacher collaboration	Schools	MoE, Service providers	High	High
R3.2 Invest in system-wide middle leader training	Schools	MoE, Education Council, PPTA, Support providers	High	High
R3.3 Use digital technologies to build skills fluency	Schools	MoE	Medium	Low
R3.4 Field test instructional resources emphasising key competencies	MoE	Schools	Medium	Medium
R3.5 Support research into school design	MoE	NZCER, ERO	Low	Low
R4.1 Streamline professional standards to improve teacher appraisal	Education Council	PPTA, MoE, Schools	Medium	High
R4.2 Broaden learning evidence in the Record of Achievement	NZQA	MoE	High	High
R4.3 Make identification of rich	NZQA		Low	Medium

standards user-friendly				
R4.4 Highlight internal processes in school reviews	ERO		High	Medium
R4.5 Incentivise employer and community collaboration with secondary schools	MoE and Government	Treasury; Ministry of Business, Innovation and Employment	Medium	High
R4.6 Ensure tertiary requirements do not override secondary curricula	MoE	Universities, Tertiary Education Commission, Schools	Low	Medium