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Te Tari Arotake Mātauranga



The Key Competencies: Realising the Potential of *The New Zealand Curriculum*

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Ko te Tamaiti te Pūtake o te Kaupapa
The Child – the Heart of the Matter

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Preparing students for the future

ERO's report, *Developing Key Competencies in Students Years 1 to 8*, describes how New Zealand schools with Years 1 to 8 students are integrating and supporting the development of their students' key competencies (KCs).

This companion report explores current thinking about the importance of building the capabilities of young people. It outlines what the KCs are, why they are important, New Zealand's journey with thinking about the nature and potential uses of KCs, and where this development fits in the international context.

The key competencies were introduced in [The New Zealand Curriculum](#) (NZC) in 2007. There are five key competencies:

- **thinking** is about students being curious, and having the creative, critical, and metacognitive processes to make sense of information, experiences, and ideas, in order to create new knowledge and reflect on their own learning
- **using language, symbols and texts** refers to interpreting and communicating information, experiences and ideas and is not restricted to literacy
- **managing self** entails being capable learners who are resourceful, reliable, and resilient with strategies to meet challenges
- **relating to others** means interacting effectively with a diverse range of people in a variety of contexts and being open to new learning
- **participating and contributing** refers to being actively involved in communities, understanding the importance of balancing rights, roles, and responsibilities and contributing to the quality and sustainability of social, cultural, physical, and economic environments (Ministry of Education, 2007, pp. 12-13).

The KCs are defined as an integral part of the curriculum, to be developed in every learning area (Ministry of Education, 2007, p. 8).

This introduction of key competencies in New Zealand took place during an international move in education research and policy towards developing school students' more general competencies. Across the world, these competencies vary in name and focus. They are increasingly recognised for their importance in equipping students with what they will need to survive and thrive in an ever-changing world.

The shift in New Zealand and internationally towards nurturing these more generalised competencies has three main drivers.

Drivers for nurturing generalised competencies

1. *Change in how knowledge is viewed*

The growth of information and communication technology (ICT) has changed which skills are viewed as valuable. Traditionally, education has centred on knowledge memorisation. This has become less useful since the internet has made information accessible to most people. It is now vital that students can search for information, be critical and discerning about its relevance and truthfulness, and appropriately apply that knowledge (OECD, 2018, pp. 59-60). Information literacy of this type is increasingly important and often implicit in the 'critical thinking' competency.


2. *Change in the nature of work*

The demands of the future labour market are uncertain. This has resulted in a shift in thinking about what outcomes of education will best prepare students for life and work. Routine tasks, such as data entry, are becoming increasingly automated. This leaves a higher proportion of tasks that require judgement, creativity and other skills. It is these competencies that teachers need to develop in their students to prepare them for the future job market (Fadel, Bialik, & Trilling, 2015, pp. 12-20).

A major challenge faced by the education system is preparing students for jobs not yet envisaged. Already we see technology reducing jobs that involve repetitive, routine tasks. Other jobs, such as a social media manager, are being created out of technological change. We can expect this type of change to continue, or escalate. In the face of uncertainty about what knowledge and skills will be useful in the future labour market, more generalisable skills should be taught so students are able to adapt as necessary (Hipkins, Bolstad, Boyd, & McDowall, 2014; Fadel, Bialik, & Trilling, 2015, pp. 12-20).

3. *New global challenges – 'wicked problems'*

The world is more complex, interdependent and in flux than in the past. Today's students require a different set of abilities than previous generations (OECD, 2005). Students face global challenges. Many of today's global issues do not have an agreed solution because they occupy multiple domains: social, economic, political, environmental, legal and moral. There are many stakeholders and perspectives, the nature of the challenges is changing, and there is incomplete understanding of their causes, consequences and possible solutions. These 'wicked problems' include climate change, environmental degradation and inequality. Schools should prepare students for global challenges by teaching skills that are transferable to unknown and complex situations (Hipkins, Bolstad, Boyd, & McDowall, 2014, pp. 22-23).



The certainty of change has implications for the kind of education our young people require and the focus of the teaching and learning they experience. New Zealand's key competencies put today's students at the centre and bring a future perspective to their learning.

It is no longer enough for students to acquire knowledge and master skills. Students need opportunities to develop their capabilities as users of knowledge and skills in diverse contexts. This requires attention not only to their recall of knowledge or ability to perform tasks, but to supporting them to be capable and creative critical thinkers and communicators. They need to be able to manage ambiguity and uncertainty, participate and relate well to others, and contribute as local and global citizens.

The key competencies provide students with the means to adapt to and succeed in an ever-changing world.

New Zealand's key competencies in an international context

In 1993, the United Nations Educational, Scientific and Cultural Organization (UNESCO) established the International Commission on Education for the Twenty-first Century. Its task was to determine what educational changes were needed to equip young people with the necessary skills for the future. In 1996, [the commission](#) reported that education systems should focus on four pillars of education:

- learning to be
- learning to know
- learning to do
- learning to live together.

The commission's report was influential, promoting conversations about the purposes of education and desirable outcomes for students.

The NZC's vision statement unpacks what these mean for New Zealand students.

Our vision is for young people:

- *who will be creative, energetic, and enterprising*
- *who will seize the opportunities offered by new knowledge and technologies to secure a sustainable social, cultural, economic, and environmental future for our country*
- *who will work to create an Aotearoa New Zealand in which Māori and Pākehā recognise each other as full Treaty partners, and in which all cultures are valued for the contributions they bring*
- *who, in their school years, will continue to develop the values, knowledge, and competencies that will enable them to live full and satisfying lives*
- *who will be confident, connected, actively involved, and lifelong learners.*

(Ministry of Education, 2007, p. 8)

The Organisation for Economic Co-operation and Development (OECD) extended the conversation about what young people should be able to do to participate in and contribute to society in the

[Definition and Selection of Competencies \(DeSeCo\)](#) project. This project developed a framework, guided by the question: ‘*What demands does today’s society place on its citizens?*’.

The OECD proposed education reforms that focus on teaching students to understand how knowledge is created and how to appropriately apply knowledge, rather than teaching knowledge recall (OECD, 2005). The OECD described its version of the key competencies in the DeSeCo report and included them in its Programme for International Student Assessment (PISA) in 1997.

The OECD key competencies are:

- **acting autonomously:** students gain an understanding of their identity and potential future role in society
- **functioning in heterogeneous groups:** students are conscious of others’ views and how to manage competing views
- **using tools interactively:** students understand the effect the use of language, symbols, texts, knowledge, information and technology has on how people interact with the world
- **thinking:** students reflect on their thinking, how they think and how they construct experience.


Hipkins (2018) notes that New Zealand’s key competencies originated from initial work for the Ministry of Education (the Ministry) about how best to translate the DeSeCo developments into the New Zealand context. The work was also informed by the Curriculum Stocktake, undertaken by the University of Waikato. This focused on the application of the Essential Skills in the different Essential Learning Areas of the 1990s curricula.

New Zealand’s key competencies are similar to the OECD’s. However, the OECD conceptualises ‘*thinking*’ as cutting across the other competencies and necessary for their development. In the NZC, ‘*thinking*’ is a separate competency. The NZC considers all the key competencies to have the potential to be used in combination and that thinking is too complex to be considered only in relation to other competencies (Hipkins, Bolstad, Boyd, & McDowall, 2014, pp. 14-15).

Figure 1: Comparing OECD and the NZC key competencies

Name given to competency by OECD		The New Zealand Curriculum version
Thinking (cross-cutting)	Acting autonomously	Managing self
	Functioning in socially heterogeneous groups	Relating to others Participating and contributing
	Using tools interactively	Using language, symbols and texts
		Thinking (not identified as cross-cutting)

Adapted from: Hipkins & McDowall, 2013, p. 3.



Several influential international contributors have identified the need for students to have similar capabilities. The following outlines four of the most recent contributions.

2014

Fullan and Scott (2014, pp. 6-7) identified *Six Cs*, personal and academic qualities and capabilities, that twenty-first century students need. These are:

- **Character** refers to qualities of the individual essential for being personally effective in a complex world including: grit, tenacity, perseverance, resilience, reliability, and honesty.
- **Citizenship** is about thinking like global citizens, considering global issues based on a deep understanding of diverse values with genuine interest in engaging with others to solve complex problems that impact human and environmental sustainability.
- **Collaboration** is the capacity to work interdependently and synergistically in teams with strong interpersonal and team-related skills, including learning from and contributing to the learning of others.
- **Communication** entails mastery of three fluencies: digital, writing, and speaking, tailored for a range of audiences.
- **Creativity** is having an ‘entrepreneurial eye’ for economic and social opportunities, asking the right questions to generate novel ideas, and demonstrating leadership to pursue those ideas into practice.
- **Critical thinking** involves evaluating information and arguments, seeing patterns and connections, constructing meaningful knowledge, and seeing applications in the real world.

2015

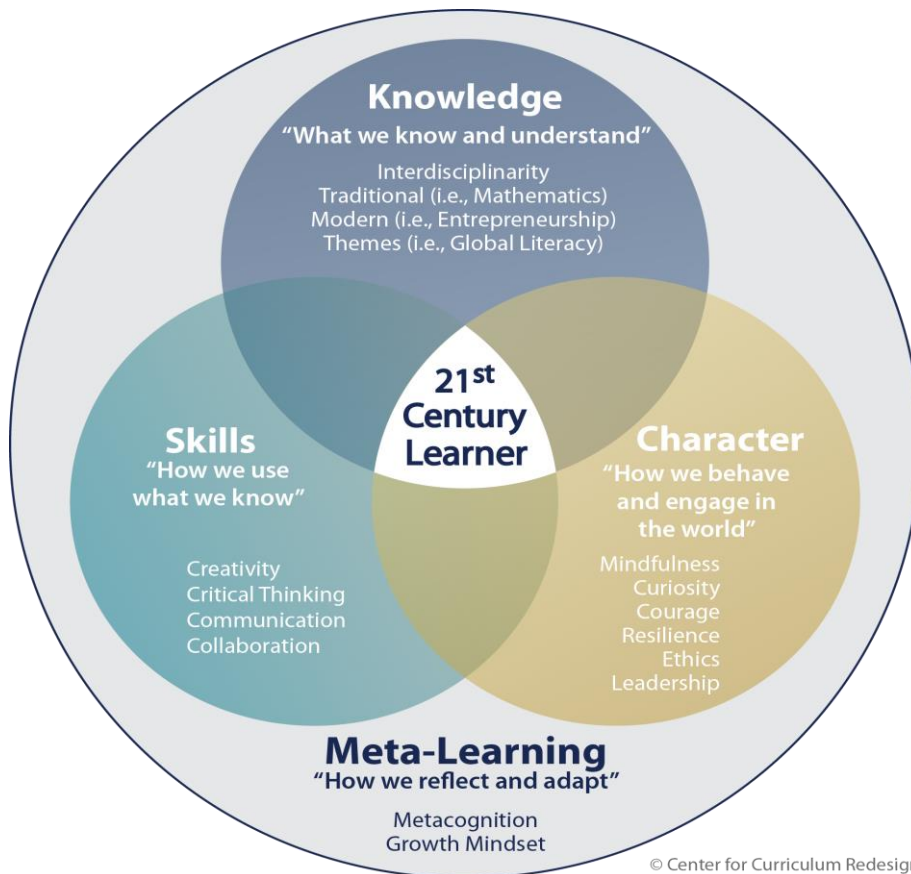
The [Center for Curriculum Redesign](#) (CCR) developed a framework to prepare students for the demands of the twenty-first century. This framework contains four dimensions:

- **Knowledge**, which is ‘what students know and understand’. The CCR argues that the primacy given to knowledge in education inadequately prepares students for the twenty-first century. While the CCR recognises knowledge is essential, it is not the only ability required of today’s students to thrive, and it should be taught through the application of skills.
- **Skills** are about ‘how students use knowledge’. The CCR defines four central skills students need to thrive in the twenty-first century: creativity, critical thinking, communication and collaboration.
- **Character** refers to ‘how students behave and engage in the world’. The CCR defines six character traits students should be taught: mindfulness, curiosity, courage, resilience, ethics and leadership. The CCR gives three reasons why developing character in students is necessary for them to thrive in the twenty-first century:
 - many of the major challenges facing today’s students involve complex ethical considerations and collaboration in a globalised world – for example, climate change and income inequality

- research has found that students’ character, regardless of skill and knowledge level, plays an important role in their work and civic life
- character traits support lifelong learning; an unpredictable and changing world requires continuous learning to face unknown challenges.
- **Meta-learning** is ‘how students reflect on themselves and adapt by continuing to learn and grow toward their goals’. There are two components of the CCR’s meta-learning framework: metacognition and growth mindset. Metacognition is ‘the process of thinking about thinking’.

Strong metacognition supports the development and application of knowledge, skills and character qualities. Consistent with the rest of the literature on key competencies, the CCR argues that developing a growth mindset in students supports long-term success (Fadel, Bialik, & Trilling, 2015).

Figure 2: The CCR Framework



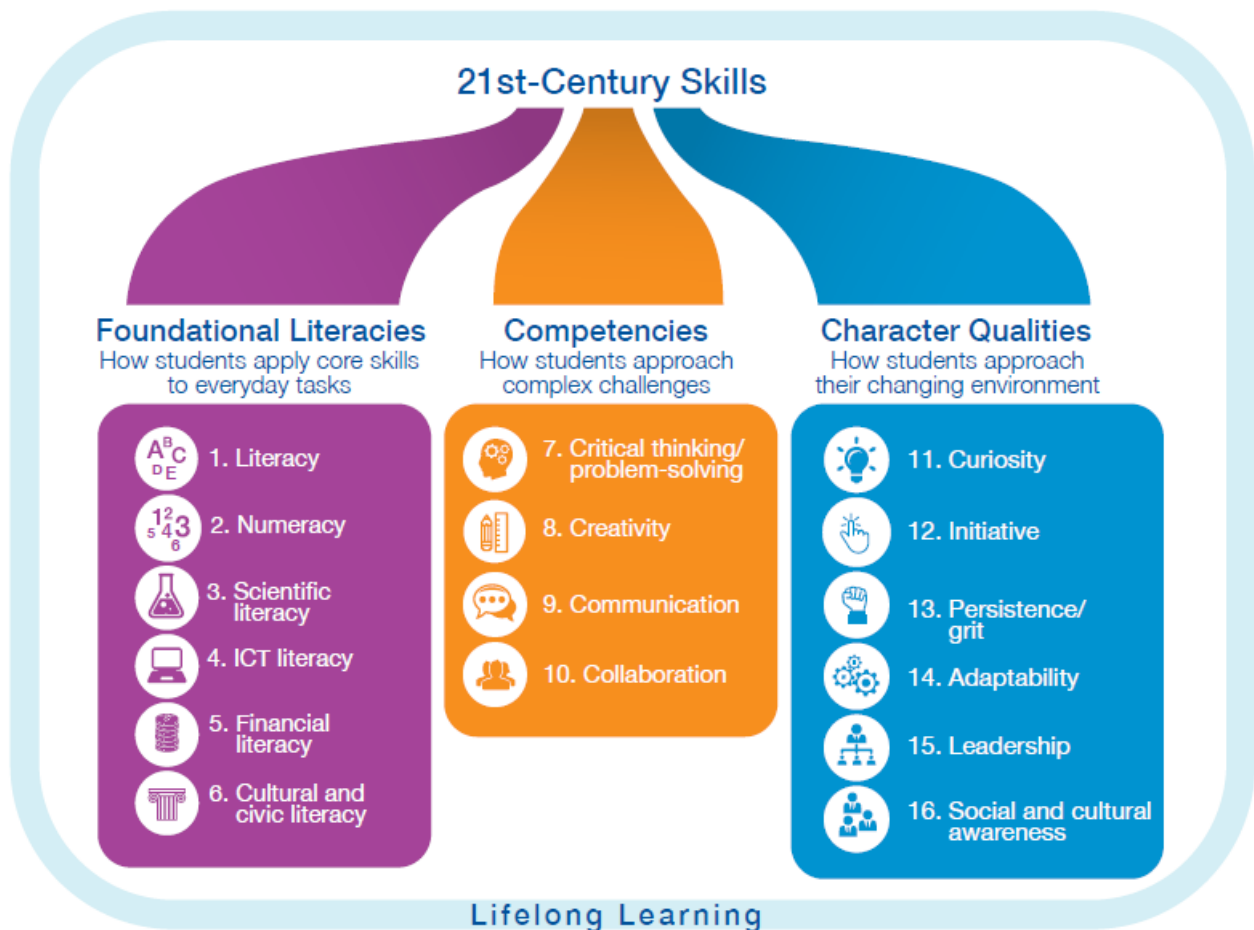
Source: Fadel, Bialik, & Trilling, 2015, p. 43.

The CCR’s emphasis on metacognition supports the OECD focus on the importance of reflection in relation to learning-to-learn. The notion of resilience features here too, an aspect further developed in the following piece of work.

2016

The importance of students acquiring general competencies was also identified in [New Vision for Education: Fostering Social and Emotional Learning through Technology](#), produced by the World Economic Forum (WEF). The report identified 16 skills students need to ‘thrive in the 21st century’.

Figure 3: World Economic Forum: 21st-Century Skills



Source: World Economic Forum, 2016, p. 4.

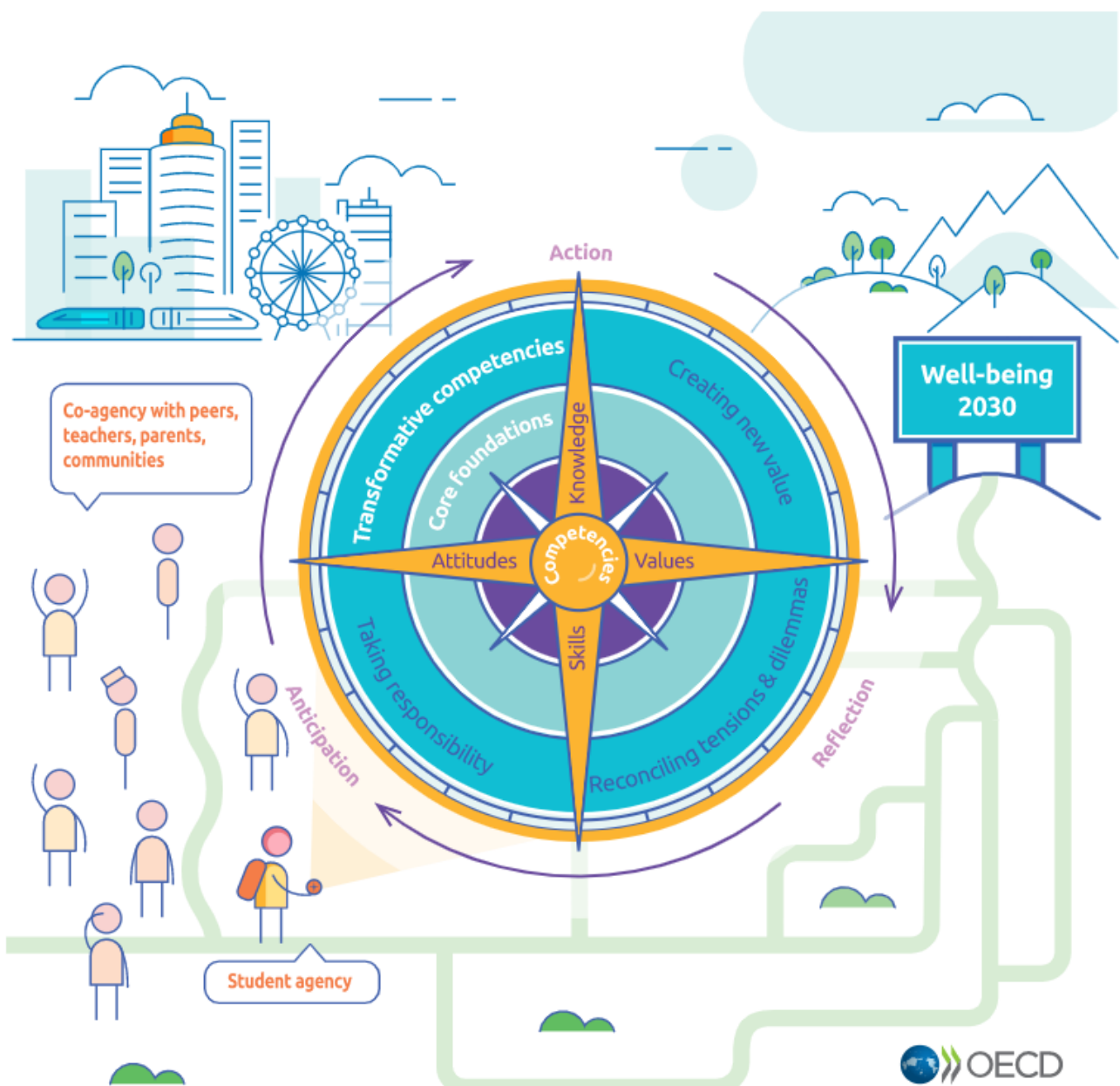
The WEF is specific about the importance of a range of literacies, including ICT literacy. Global literacy (CCR) is not among them. Curiosity and resilience (in the form of persistence and grit) echo the CCR attributes. The WEF introduces initiative, leadership, and social and cultural awareness as important qualities. The report emphasises the value of social and emotional learning. It points to evidence that social and emotional skills lead to better academic performance and career success, together with a range of other measures of lifetime success.


2018 and ongoing

The OECD, as part of the Future of Education and Skills 2030 project, has developed the [OECD Learning Compass 2030](#). This extends the work started by the DeSeCo project. The compass 'defines the knowledge, skills, attitudes and values students need to fulfil their potential and contribute to the wellbeing of their communities and the planet'.

Figure 4: The OECD Learning Compass 2030

The OECD Learning Compass 2030





The graphic is interactive online, providing the detail behind each of the aspects in the compass. The OECD has developed resources, that include commentary by students, to support understanding of these aspects.

Core foundations are the prerequisites upon which every other aspect of learning is built. They are:

- **Cognitive foundations** such as literacy and numeracy upon which other literacies can be developed, e.g. digital literacy, data literacy, media literacy and global literacy.
- **Health foundations** including physical and mental health, and wellbeing.
- **Social and emotional foundations** addressing morals and ethics.

As in the WEF report, social and emotional development is recognised as a critical component of learning and, in line with research, emphasises the close link between wellbeing and learning.

The OECD introduces agency with co-agency. This reflects the interrelated world we live in and the importance of students' active role in their education as individuals and in mutually supportive relationships with others.

The transformative competencies provide a purpose to creativity and critical thinking in the form of 'creating new value'. They acknowledge the complexities of the world and the need to tolerate ambiguity and uncertainty – skills that require empathy, respect and resilience.


Research from New Zealand and international contributors between 2014-2018 share common and related threads in thinking and developing what students need to successfully navigate the future and contribute to the wellbeing of their communities and the planet.

Teaching and learning has to change

The inclusion of key competencies in *The New Zealand Curriculum* (2007) redefines what should be taught to prepare students for lifelong learning. This is in keeping with what has been proposed internationally.

Fullan and Scott (2014) are clear that modern learning:

... is about collaborative learning through reflection in action and on action in order to become better at negotiating the messy, fuzzy, dilemma-ridden context of real-world life and work with positive impact. It is about developing an attitude of mind, a set of values and the personal, interpersonal and cognitive capabilities identified repeatedly in studies of successful early career graduates and those leaders who have helped create more harmonious, productive and sustainable workplaces and societies. (Fullan & Scott, 2014, p. 4)



The key competencies vary internationally. However, there are common themes and exemplars for effective implementation of key competencies to equip students with the capabilities they need for the future. These include teachers:


- preparing students for a complex world, in which challenges have no simple solutions, by focusing on ‘wicked problems’ (Hipkins, Bolstad, Boyd, & McDowall, 2014, pp. 22-24)
- using ‘could be’ language to help students answer open-ended questions, which encourage students to think critically and creatively (Lucas, Claxton, & Spencer, 2013, pp. 142-144)
- working with families, linking learning content more closely to the real world; this includes incorporating what students learn at home into schools and vice versa, and equipping students with skills useful beyond the workplace (Lucas, Claxton, & Spencer, 2013, pp. 141-142)
- focusing on learning, with attention to:
 - **Growth mindset** – teachers encouraging students to believe that learning is continuous. This is in contrast to a fixed mindset, which holds that intelligence is genetically determined and immutable (Lucas, Claxton, & Spencer, 2013, pp. 128-139).
 - **Metacognition** – teachers guiding students’ reflection on their learning. Students should be supported so they know how to be effective lifelong learners (OECD, 2005).
 - **Learner agency** – teachers giving students opportunities to direct their own learning and take risks which will support them to be adaptive and able to apply key competencies in unfamiliar learning situations (Charteris, 2013).
 - **Shifting priorities for learning** – reducing recall learning to provide students with more opportunities to deepen understandings (OECD, 2018, pp. 59-60).

Examples in practice can be seen in [The Institute for Habits of Mind](#), [Building Learning Power](#) and [A Rich Seam: How New Pedagogies Find Deep Learning](#).

Because such examples of teaching practice are not common in schools, pedagogy needs to change.

Students are more likely to develop those competencies and capabilities that they have opportunities to experience, practice and discuss. Teachers need to enable students to identify their strengths and challenges as learners. Students can then determine what strategies to use and what they need to practice, to build their learning capabilities. Learning-to-learn requires the interplay of metacognition and co-agency (OECD Learning Compass 2030). Teachers’ support of students to take agency (co-agency) helps students to be aware of themselves as learners (metacognition).

Effective pedagogy for development of key competencies also includes teachers promoting students’ self and peer assessment.



Several authors have identified aspects of teacher knowledge and thinking needed to build self and peer assessment capabilities in students. These aspects include:

- a belief that the practice is likely to benefit learners
- a deep practical knowledge of quality outcomes
- willingness to allocate time to designing assessment criteria with students
- knowing how to support students to apply this knowledge to their works in progress, to have peer-to-peer assessment conversations, and to respond appropriately to feedback from teacher and peers.

(Hipkins & Cameron, 2018, p. 30)

Such practices would promote students' metacognition, a deep appreciation of the expectations implicit within tasks, and strong learning partnerships of students with their teachers and peers.

Developing thinking about the key competencies in New Zealand

The [New Zealand Council for Educational Research \(NZCER\)](#) identified four phases of development in school leaders' and teachers' thinking about what the key competencies are and their role in education, since their introduction in 2007 (McDowall & Hipkins, 2018).¹

The phases represent movement towards recognising and realising the potential of the key competencies. ERO has used them to indicate the journey a school could take in developing the KCs in students.

Phase 1

- School leaders and teachers have a common concern that the KCs will replace the learning of traditional knowledge and skills.
- Schools are yet to think about how the KCs could be used to help students manage their own learning.
- The KCs are made to fit into existing teaching practices, rather than to inform them.

Phase 2

- Leaders and teachers shift from considering the goal of learning as the uptake of content, to viewing the learning of content as a vehicle for equipping students with the skills to be lifelong learners.
- Some teachers use inquiry topics to provide opportunities for students to have greater agency in their learning. This includes providing students with choices about the content they learn and how they carry out their learning.
- Some teachers begin to recognise the potential to use the KCs in distinct ways for different learning areas, though the KCs are still mostly used uniformly regardless of learning area.

¹ For details of some of the theoretical research overviewed by the NZCER see Appendix 1.

Phase 3

- Uses of the KCs are further developed in ways that are specific to learning areas.
- Leaders and teachers see the KCs as more complex and multi-faceted than in previous phases.
- This increased complexity is reflected in the introduction of ‘capabilities’. ‘Capabilities’ are defined as the learning outcomes of students who are practising the key competencies. They are developed from weaving together one or more KCs with learning area content.²
- Some teachers design rich tasks, which weave appropriate aspects of different KCs with concepts from one or more learning areas to build students’ capabilities. Rich tasks include a conceptual focus and a ‘doing’ focus that draw on aspects of all the KCs.

Phase 4³

- Some teachers use inquiry projects to deliver the curriculum in more complex, open-ended ways than in previous phases. Inquiry topics based on real issues provide students with opportunities to solve problems, requiring them to make use of previous knowledge and develop their KCs (McDowall & Hipkins, 2018).

Teachers operating in *Phase 4* or at an equivalent level would provide students with a sound curriculum within which students can strengthen their capabilities as confident, connected, actively involved, lifelong learners. They are learning to learn.

Problems facing implementation

New Zealand and international literature identify the following barriers to effective implementation of the KCs:

- **System-wide confusion over the KCs and their place in students’ learning**
There is a mistaken belief among teachers that KCs risk replacing knowledge learning (McDowall & Hipkins, 2018, p. 5). The reverse is true. The KCs and knowledge complement one another. When knowledge is memorised rather than used in the application of skills, studies have found that students have only a superficial understanding of that knowledge and are less capable at applying and remembering it in the long term (Fadal, Bialik, & Trilling, 2015, p. 69).
- **Teacher opposition**
In *Expansive Education*, Lucas, Claxton, and Spencer identified teachers as the biggest barrier to implementing KCs. Some were unwilling to move away from familiar teaching styles (Lucas, Claxton, & Spencer, 2013, pp. 173-175). KCs need to be recognised as an integral part of all teaching and learning, not as an addition to the curriculum.

² See Appendix 2 for more information on one of these capabilities.

³ NZCER’s description of this phase is incomplete at the time of writing this report as their research is still ongoing.

- **Clarity of benefit**

Resistance to a focus on the KCs comes from a lack of data that conclusively demonstrates positive student outcomes. The outcomes of KCs are not usually measured. Until teachers come to terms with how to teach them explicitly and what they look like in practice, we cannot determine how well they prepare students for future challenges. Substantial evidence shows that if we continue to teach in traditional ways, students will be ill-prepared for demands they will face when they leave school. To rule out the KCs for lack of evidence would be premature, and most likely detrimental (Fadal, Bialik, & Trilling, 2015, pp. 104-105).

- **Assessment is a work in progress**

Hipkins and Cameron (2018) discuss the difficulties associated with assessment of the KCs, as they can be context-based and two or more often interplay. Assessment challenges should not detract from teachers focusing on the pedagogy required to provide students with the opportunities to develop their capabilities. Scoular and Heard (2018) are adamant that the question is no longer **why** but **how** we should be teaching and assessing general capabilities.

Teaching practice that integrates the key competencies

The literature recommends ways teachers can weave the KCs into their practice to help students learn to learn. These include teachers:

- understanding that the KCs work alongside the gaining of knowledge and are tools to better understand and work with knowledge (Hipkins, Bolstad, Boyd, & McDowall, 2014, pp. 135-137)
- encouraging students by using language appropriate to the learning area; for example, telling students they are *'thinking like historians,'* or *'investigating like scientists'* (Hipkins, 2017, p. 4)
- giving KCs the right degree of specificity: if they are too general, students may find it hard to understand their significance; if they are too narrow in meaning, their use can be limited (Lucas, Claxton, & Spencer, 2013, p. 66)
- fostering a growth mindset by:
 - using optimistic words about students' learning progress; rather than saying a student has not achieved a skill or task, the teacher can say the student is 'beginning to develop' or 'will achieve with more support'
 - encouraging students to learn from their mistakes by emphasising the benefits of constructive criticism and expressing it in a way that avoids embarrassment
 - encouraging students to set ambitious goals, and offering support as they pursue these
 - encouraging deliberate practice, for purposeful and systematic learning (Lucas, Claxton, & Spencer, 2013, pp. 138-140)

- posing ‘wicked problems’ to help students become comfortable with ambiguity and to provide opportunities to employ competencies in novel situations (Hipkins, Bolstad, Boyd & McDowall, 2014); and
- guiding students participating in self- and peer-assessment of their learning, with students and teachers sharing common language to describe learning (Hipkins, 2008)

Guidance counsellors can also help development by asking students to reflect and practise the KCs to resolve challenges in their lives. Guidance counsellors are often able to gain insights to the specific needs of students and how they can overcome behaviours negatively affecting their learning (Kotzé, Hughes, Graham, & Burke, 2014).

The New Zealand Curriculum and current thinking

Sufficiency of detail, guidance and opportunities to learn

The NZC provides insufficient detail to help teachers understand what the KCs mean for students and how to integrate them in their practice. NZCER’s four-phase framework shows the potential of KCs to transform students’ learning experiences.

ERO’s companion report, *Developing Key Competencies in Students Years 1 to 8*, explores the status of the key competencies in primary schools. It notes that the best of the schools were operating only at the equivalent of *Phase 2*. For all schools to evolve their practice towards *Phase 4*, support and guidance is needed for teachers to develop the confidence and capability to integrate the KCs.


It is up to teachers to determine what is meant by the KCs and how to provide students with the opportunities to develop the competencies. While the NZC states that development of the KCs should be in the context of the learning areas, teachers should not exclude the many, rich opportunities of the extended school curriculum. Leadership, for example, can be nurtured in extra-curricular activities.

Coverage of twenty-first century skills – digital literacy

The NZC KCs do not cover all the twenty-first century skills identified by the World Economic Forum (WEF). The WEF emphasises digital literacy (WEF, 2016). This emphasis is shared by Fadel, Bialik and Trilling in *Four-Dimensional Education*, which stresses that digital literacy will become even more important in the future as technologies continue to develop (Fadel, Bialik, & Trilling, 2015, p. 67).

This is not explored in the New Zealand literature on the KCs. The NZC’s description of how KCs can facilitate learning in this area is brief, and this role is touched on in only one key competency – using language, symbols, and texts: ‘*they [students] confidently use ICT (including, where appropriate, assistive technologies) to access and provide information and to communicate with others*’ (Ministry of Education, 2007, p. 12).

Recent changes to the NZC include Digital Technologies | Hangarau Matihiko curriculum content, focusing on computational thinking and creating digital technologies. Digital literacy and fluency,



and other literacies, such as media, data, financial and global literacies (OECD Learning Compass 2030), are not explicitly considered.

How the KCs can work together

The NZC does not discuss how KCs can work together, for example, to develop leadership skills. The NZC identifies only managing self as a key competency that helps build leadership, stating that students should ‘*know when to lead, when to follow, and when and how to act independently*’ (Ministry of Education, 2007, p. 12).

Leadership is one of the CCR’s six skills (Fadel, Bialik, & Trilling, 2015, pp. 92-93) and one of the WEF’s Twenty-first Century skills for students’ success (WEF, 2015). Given its importance, some guidance from the Ministry as to how the KCs can be used to enhance leadership would be helpful for schools.

Curriculum support for schools and teachers

Ministry support for schools and teachers to develop their students’ KCs has been limited in recent years. The majority of [Te Kite Ipurangi \(TKI\)](#) publications about KCs are from before 2015. The [School snapshots](#) provide some examples of the different ways schools are focusing on the KCs. These could be updated for current thinking, to ensure that the KCs are represented properly. For instance, no snapshot should represent *Managing self* as simply ‘being ready for learning’.

NZCER’s research shows how teachers’ thinking and practice can change to fulfill the intention of the NZC. Schools and teachers need comprehensive resources to support them to fully appreciate and integrate KCs in their curriculum. Building teacher capability for this would complement the Ministry’s priority of supporting schools to develop their local curriculum.


The need for system change

School leaders cannot rely on the efforts of individual teachers to effect change. Lamb et al. (2017) are clear about the need to change the system to better incorporate the competencies in daily practice of schools.

Curricular development is but one strategy to better embed skills into teaching and learning, and risks by itself being more a rhetorical exercise. It is clear from the different accounts that many systems are now starting to move beyond statements of aspiration and are considering how to better integrate identified skills within classrooms. It is via widespread and transformative systemic reform that whole cohorts of students are likely to have better opportunity to cultivate desirable skills within formal schooling. More effective reform is likely to involve approaches that consider teaching standards, assessment, curriculum and instruction, professional development and learning environments.

(Lamb, Maire & Doeke, 2017, p. 46)

School-wide direction is required for a coherent approach to changing both curriculum and pedagogy. School leaders play a pivotal role in this.



System-wide change extends to the wider education system, where we must find ways to recognise and value the outcomes that equip the individual to thrive in the future and are additional to academic attainment.

Conclusion

New Zealand introduced the key competencies in *The New Zealand Curriculum* in 2007, in line with a global movement in education policy. This was in response to new demands placed on the current generation of students by technology shifts, future market-based demands and global challenges.

It is now timely for schools to refocus on how they build their students' key competencies. One of the Ministry's priorities for professional learning and development is local curriculum development. Designing the local curriculum should be an opportunity for schools to keep the NZC key competencies to the fore.

ERO recommends that the Ministry supports leaders and teachers to fully realise the potential of *The New Zealand Curriculum* through:

- unpacking the key competencies to provide clarity for all teachers about their meaning
- providing more resources, including examples of how to develop KCs in teaching practice.

Up-to-date guidance would provide direction for how to assimilate the KCs into local curricula and make necessary shifts in pedagogy.

This support should result in improved practice and opportunities for students to develop key competencies and achieve personal growth and academic success, enabling them to adapt to change and enhancing their lifelong learning.

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Appendix 1: Research in developing thinking on the key competencies

This appendix contains the research and theoretical development of the four phases of working with the KCs identified by NZCER (McDowall & Hipkins, 2018).

Phase 1

- There were several research projects undertaken at schools during this phase: [The Key Competencies in Normal Schools](#); the *Key Competencies Case Studies*, which was in early adopter schools; [Key Learning Competencies Across Place and Time](#), which was in early learning services and the first years of primary schools.
- There was also theoretical research in this phase: [The Nature of Key Competencies: A background paper](#) demonstrated the importance of pedagogy for developing key competencies in students; NZCER hosted a conference, *Key Competencies: Repackaging the Old or Creating the New?*, in 2016; and published [Documenting Learning of Key Competencies: What are the Issues?](#), which explored the potential for assessing KCs.

Phase 2

- The Ministry of Education (the Ministry) funded two large pieces of evaluation research on the NZC: the [Monitoring and Evaluation Curriculum Implementation](#) (MECI) and the [Curriculum Implementation Exploratory Studies](#) (CIES). Although these projects focused broadly on the NZC, they included a focus on the key competencies. The Cognition Institute also funded NZCER to undertake the [Lifelong Literacy research project](#), which looked at ways of incorporating key competencies into reading programmes.

Phase 3

- Two research projects furthered the integration of key competencies and learning area content: the [Key Competencies and Effective Pedagogy](#) project, which was funded by the Ministry, focused on the integration of key competencies and learning area content; and the Nature of Science (NOS) research, which was also funded by the Ministry, which defined five [science capabilities](#)⁴ students need to be informed citizens.
- A third research project (Bolstad et al., 2013) investigated New Zealand students' [international capabilities](#). This project also looked into how key competencies could be assessed.

Phase 4

- In 2014, NZCER published [Key Competencies for the Future](#), which explored the current and potential role of key competencies for giving students the skills to thrive in an uncertain future.
- Key competencies were investigated in several [National Monitoring Study of Student Achievement \(NMSSA\)](#) reports. This included an exploration of the ways different aspects of key competencies and learning area content were woven together.

⁴ Available at <https://scienceonline.tki.org.nz/Nature-of-science>

Appendix 2: Developing literacy skills using key competencies

Insightful examples of how teachers can integrate development of the key competencies in reading can be found in Twist and McDowall's (2010) work.

In one story, the teachers significantly shifted classroom practice by changing:

- the teacher's role (e.g., becoming a *teacher as reader* rather than a *teacher of reading*)
- the selection of text (e.g., sharing a story the teacher had really enjoyed)
- the nature of the discourse (e.g., some control relinquished to students)
- the pace of the lesson (e.g., to model the thinking involved in being a reader)
- the tasks set (e.g., posing questions that will stimulate debate).

Twist and McDowall (2010) highlight how one teacher was able to balance responding as a reader and providing guidance as a teacher:

I could sort of ... stop being the teacher, I mean sure I would say look, where does it say this about this relationship? [i.e., insisting on evidence from the text]. But I kept trying to bring it back to a more sort of informal setting.

(Teacher)

Critical interactions increased, where students initiated and led discussion. Students' discussions became more open and students were increasingly analytical when reading text. They were better able to make connections to other texts and their own life experiences.

[Taking] more time over things that you may not have even touched on before, like the prior knowledge and the discussing and relating to others ... Once you start doing that ... everybody starts sharing and we saw that with our kids. You know, like they were really into, they were ... I can hardly keep them quiet...

(Teacher)

I think that those discussions would work at every level. I think as teachers we just rush through things so quickly that we just don't take time and how can kids enjoy books if we're not taking time and savouring them.

(Teacher)

Students became more immersed and engaged in their reading, coping with more difficult texts through the opportunity to develop the key competency of Participating and Contributing.

Other examples relate to promoting literacy through the development of Using language, symbols and texts.

Appendix 3: Developing capabilities using key competencies

This appendix explains the purpose and meaning of capabilities and how they can be developed using KCs (Hipkins, 2017).

The shift in focus from KCs to capabilities captures the increased complexity of more recent thinking about 'weaving'. In NZCER's *Phase 3*, 'capabilities' were re-defined to describe the learning outcomes of students practising KCs.

Capabilities are developed from weaving together one or more KCs with learning area content. The capabilities approach recognises that the KCs are not stand-alone practices and allow for a clearer understanding of the outcomes that can be achieved through effective teaching of the KCs.

Hipkins (2017) identified four capabilities, which are valuable in all learning areas and which each require students to draw from at least two KCs. The first of these capabilities were derived from an analysis of National Monitoring Study of Student Achievement (NMSSA) assessment tasks. They were what students needed to be able to do to complete tasks across a range of learning areas. The fourth arose as an additional, important capability beyond task completion.

The capabilities are:

- **meaning-making:** students take the mindset of the learning area, which involves comprehending the knowledge-building and communication practices of the learning area and developing one's own ideas in the learning area
- **perspective-taking:** identifying and understanding an idea, action or challenge from other perspectives
- **critical inquiry:** understanding how knowledge is being made and being able to critically assess knowledge
- **taking action:** wanting and knowing how to take action to expand their personal growth and/or contribute to wider society (Hipkins, 2017).

A closer look at a capability: perspective-taking

Perspective-taking is identifying and understanding an idea, action or challenge from other perspectives.

Students have traditionally been given few opportunities to interact with diverse people and ideas; assessments are based on the individual, and students tend to be surrounded by peers of similar abilities. The purpose of the inclusion of perspective-taking in the curriculum is to help students to do things such as:

- create content (e.g. written report or advertising) for a specific audience
- understand creators' intent in literature and media and appreciate their ideas
- understand different cultural and societal views
- know what technology or consumable products are demanded
- grasp why people hold differing viewpoints
- critically assess what should be in an inquiry.

Use of KCs in perspective-taking:

- **relating to others:** taking a different point of view when faced with a challenge, situation, or action sequence
- **managing self:** students must listen and be open to others' views, taking care not to have their own views dominate their thinking
- **thinking:** critically evaluating other perspectives
- **participating and contributing:** many contexts of inquiry and action necessitate an awareness of different perspectives
- **using language, symbols and texts:** allows students to understand how the creator of knowledge plays a role in its validity and how it is expressed across different learning areas.

Ways that teachers can encourage perspective-taking:

- provide tasks that will invite a range of viewpoints from students
- include the teaching of knowledge on a given problem that involves perspective-taking to help students find solutions
- provide perspective-taking activities where students are actively engaging with one another to find solutions
- create groups of diverse students (e.g. students of different abilities)
- encourage diverse ideas
- provide opportunities for students to create collective ideas
- encourage students not to see their ideas as fixed by giving them opportunities to change their viewpoint on issues (Hipkins, Bolstad, Boyd, & McDowall, 2014, pp. 45-80).

The Ministry's Te Kete Ipurangi [website](#)⁵ includes a good example of a classroom task to build students' perspective-taking through a focus on key competencies. A brief summary follows.

Should Waitangi Day be kept as our national holiday?

A social studies class was studying the Treaty of Waitangi. The teacher gave students newspaper articles and other sources of information showing different perspectives about keeping Waitangi Day as a national holiday.

At the beginning of the topic students participated in simple perspective-taking activities such as creating a 'for and against' graphic. Towards the end of the unit the class debated '*Should Waitangi Day be kept as our national holiday?*'. Students went into this debate equipped with the knowledge to inform their points of view.

The teacher arranged the debate using the Philosophical Chairs Model: students were divided into groups based on their views, with the for and against groups facing each other and a neutral group in the middle.

Students were awarded points for:

- relevant comments
- asking a question that evokes further discussion with others
- supporting their argument with evidence
- making a concession.

Points were deducted for

- not paying attention
- interrupting and stopping others participating
- not providing appropriate evidence when presenting a 'fact'
- personal attacks.

This activity developed students' perspective-taking capabilities by providing a controlled space in which they could exchange viewpoints, while developing self-control to listen and make sense of other perspectives.

The focus key competencies of this exercise were: relating to others and thinking (critical and values clarification).

⁵ <http://nzcurriculum.tki.org.nz/Key-competencies/Key-competencies-and-effective-pedagogy/Engaging-examples-of-practice/Waitangi-Day>