Ensuring Curriculum and Assessment in Ireland remain Fit for the Future: Assessment and Key Competencies

Report to NCCA

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Introduction

In her report '*Lessons Learned* - Implementing *a key competency approach to curriculum- lessons learned from other jurisdictions'* (2023) Carol McGuiness emphasised the importance of constantly keeping the purpose of introducing key competencies into the curriculum to the foreground of discussions. There are a number of reasons why this sense of purpose is an issue of worldwide concern as countries seek not only to introduce what are commonly described as 21st century competencies but also to discern how student progress in these competencies might best be discerned and assessed.

Countries internationally are examining their high stakes assessment systems to consider the extent to which systems that have traditionally served young people and nations well, will continue to do so in a fast changing future. This, in part, is triggered by a desire to ensure that qualifications and assessment, traditionally seen to serve some students well, should in future serve all students well. A second factor that has led to greater interest in 21st century competencies is the concern that students, particularly in countries with a history of dependence on high stakes examinations have seen unintended consequences from an over-reliance on one form of assessment. Examinations offer one approach to gathering evidence and are highly effective for some purposes but not for others. Stobart (2021) reported that countries with a high stakes examination tradition often faced common challenges. For example, time in school was dominated by rehearsal for examinations at the expense of time for teaching; memorisation and rote learning dominated student experiences; and, students reported high levels of stress. The desire to provide students with deeper learning opportunities is a third driver behind the introduction of the assessment of key competencies. Having students use the knowledge they have acquired in ways more closely linked to real life experience is argued to motivate students, helping them to see greater purpose in learning and to provide them with the skills they will need as they move beyond schools into college, university, employment and life.

A fourth driver for increased interest in key competencies is the introduction and the acceleration of Artificial Intelligence (AI) This has brought the pace of societal change into sharp focus. Recent developments in AI have been described as "The Industrial Revolution for Human Intellect'" (Soral, 2023). The speed of change is increasing. ChatGPT, AI based on language prediction, had 1 million users 5 days after its release. To put that in context, it took Netflix 3 years to reach 1 million users, Twitter 2 years and Facebook 10 months (Ahmad, 2023). The emergence of a generative AI model in September 2024 represents a further significant advance in Artificial Intelligence. Described by the creator, the company Open AI, as '*a new series of AI models designed to spend more time thinking before they respond. These models can reason through complex tasks and solve harder problems than previous models in science, coding, and math'.* They report that the o1 model operates at the level of a PhD student when undertaking challenging tasks in physics, chemistry, biology, mathematics and coding. They conclude*……'for complex reasoning tasks this is a significant advancement and represents a new level of AI capability. Given this, we are resetting the counter back to 1 and naming this series OpenAI o1'*. (Open AI, 2024). Generative AI is a further step change in Artificial Intelligence.

Pitkow, who studies the intersection of AI and neuroscience, (BBC online, 2024) argued that whilst AI can analyse vast quantities of data, the human mind still has significant advantages. The brain '*is built for levels of reasoning, flexibility, creativity and abstract thinking that AI still hasn't replicated.* As AI develops further, it seems likely that developing key competencies will become increasingly important for individual students and for societies.

The language of key competencies internationally is somewhat confusing. There are few common terms, and different countries use different language to describe overlapping ideas. Some talk of competencies, others of capacities or capabilities. Some nations use the term core competencies whilst others refer to key competencies. For the purposes of this paper, when reporting information from different countries, the terms used reflect the language used in the curriculum in Ireland, i.e., key competencies.

Ireland is not starting from a clean sheet in the development of key competencies. NCCA has devoted significant attention to their development. The Senior Cycle has its own history in this field. The Key Skills Framework for Senior Cycle (NCCA, 2009) has similar aspirations to the Senior Cycle student competencies framework. This history offers the potential for schools and teachers to situate developments as extending current practice with which they already have a degree of familiarity. In 2018, NCCA commissioned Professor Carol McGuiness to investigate 21st century competencies in relation to the redeveloped primary curriculum (McGuinness, 2018). The report developed a classification system for key competencies.

It is, therefore, important to acknowledge that, in Ireland, progress is already being made and young people entering the Senior Cycle will do so with expertise from the Junior Cycle, where significant work to develop competencies is underway. The Framework for Junior Cycle (2015) outlines an aim to achieve a balance between learning subject knowledge and developing a wide range of skills and thinking abilities (Department of Education and Skills, 2015 p. 7) Learning outcomes in Junior Cycle are described as *'statements in curriculum specifications to describe the knowledge, understanding, skills and values students should be able to demonstrate after a period of learning'* (2015 p.10)

The Senior Cycle has the opportunity to build on, learn from and extend these experiences within the subject culture of secondary education. Subjects and modules in Senior Cycle will remain at the heart of what it is to be an educated citizen in Irish society. Knowledge is crucial but future students will need more. They will require the skills, values and dispositions necessary to enable them to use knowledge to tackle creatively the problems that our present and future societies face.

Assessing key competencies can be a contentious topic. Some believe competencies should not be assessed and others suggest that without assessment in some form key competencies will disappear from the curriculum. Certainly, questions remain as to how student progress in the development of key competencies can be discerned without some form of assessment. However, it is evident that the introduction of key competencies and consideration of their assessment must be undertaken with care. Key competencies encourage connections to be made between learning and life. Thus, they have the potential to enhance students' understanding of and commitment to study in specific subjects. This approach also has the potential to help students to see the relevance of what they are studying, the connections across subjects and how they can use knowledge and skills to tackle problems that matter to them and to current and future society. A curriculum based around key competencies has the potential to deepen students' learning experiences in schools, supporting them more effectively into the next phase of their lives.

McGuiness (2023) counsels that we should not underestimate the curriculum design challenges or the teaching challenges. We should also not underestimate the assessment challenges. However, no matter how difficult these challenges might feel, the risk of not acting is too great for the students of Ireland and for Ireland itself. Ireland has an international reputation as a system that is principled, pragmatic and collaborative. These are qualities that will serve the system well in facing the challenges of assessment of student progress in the key competencies. Realising the potential that exists in a key competencies approach will involve learning: from research, from policy and practice within Ireland and learning with other countries who are attempting to address similar challenges.

Methodology

The purpose of this piece of work is to provide dependable evidence to the NCCA to inform their thinking on how progress might best be made on the assessment of key competencies. It is important that within the confines of the task, ideas are both principled and practical. The methodology for the task is divided into two parts. The first part was designed to identify current leading edge thinking in the assessment of key competencies. A desk review was undertaken of key documents that offered insights into current thinking on the assessment of key competencies. Texts were identified using a combination of online searches and consultation with researchers and policy makers working as leading thinkers in the field. The original long list of possible sources was reviewed, and a short list of key documents was developed comprising those texts most closely related to the task. The methodology for dependable evidence summaries emerges from the EPPI (Evidence for Policy and Practice Information) protocol for a rapid review of existing evidence (O'Mara-Eves *et al.*, 2016). Rapid reviews have been commonly used in Health policy contexts to inform evidence-based practice and are increasingly used more widely in policy related research.

The second strand of the methodology was intended to elicit evidence on the development of the assessment of key competencies in practice. Interviews were held with policy makers and practitioners involved in the day-to-day processes of policy and practice in the assessment of key competencies. Four countries were identified. The three countries who had been part of the McGuiness report (2023) were ones whose aspirations were similar to those of Ireland. They were included both because of the similarities of vision and to provide continuity with the previous work undertaken to inform that paper. A fourth country, Singapore, was added. Singapore is recognised internationally as a highly successful education system where, like Ireland, high stakes examinations have played a major role in culture. In addition, education in Singapore is in the process of significant reform as the country seeks to ensure that its education system remains fit for the future. Context is crucial and countries cannot learn from one another, They can, however, learn with one another and it is in that spirit that evidence from other countries is provided.

The findings emerging from both parts of the methodology, the desk review and the analysis of interview data from policy makers and practitioners, are combined in the final section of this report to inform the findings and recommendations offered.

Section One: Research on Key Competencies

NCCA has already undertaken significant, high-quality research in this area (McGuiness 2018, 2023). The current study arose from a recommendation from the McGuiness report (2023, Para 5.9). McGuiness (ibid) points to the importance of whole system alignment for the successful introduction of key competencies but recognises the particular power of assessment to drive or interfere with their development. This is a particular issue in the Senior Cycle where high stakes assessment plays such a powerful position in the thinking of students, parents, teachers and wider users of qualifications.

It is a quarter of a century since key competencies began to emerge in curricula internationally. Yet, Tahirsylaj & Sundberg (2020) describe 21st century competencies in curricula as unfinished business since their early emergence in their late 1990s. Hipkins (2007) encouraged greater attention to be paid to the assessment of competencies in New Zealand. She argued that when thinking about assessing key competencies, we need to extend the range of questions we ask about assessment. For example, would the inclusion of key competencies suggest the need for different sorts of learning outcomes? Would this pose different kinds of assessment challenges? Will assessment information about key competencies serve the purposes we already have or might there be new purposes? Should key competencies be assessed or will they do their curriculum work through the ways in which we refocus other outcomes? Many of these questions still remain to be addressed.

In Scotland, in theory, the curriculum has been competency led for more than 20 years. However, although there is wide support for the vision of learning in Scotland as described in terms of four capacities: successful learners, confident individuals, effective contributors and responsible citizens, much of the focus particularly in the senior phase of Scottish Education continues to be on one aspect- successful learners. The latter stages of secondary education in many countries tend to be dominated by assessment for qualifications in whatever form they exist. The lack of alignment between curriculum aspirations and the experiences of learners in Scotland (OECD, 2021; Stobart, 2021) may at least in part be due a mismatch between curriculum and qualifications. In recognition of the major influence assessment will have in determining the extent to which key competencies would become embedded in school practices, the European Commission (2023), (Directorate-General for Education, Youth, Sport and Culture), Janet Looney (European Institute of Education and Social Policy) and Gillian Kelly (Ecorys), published a report specifically focusing on assessing learners' competencies. This report paid particular attention to the relationship between policy and practice. It was based on the work the Working Group on Schools – subgroup 'Pathways to School Success' who also reviewed and validated the summary report before publication.

The question addressed by the group was how formative (assessment for learning) and summative assessment (assessment of learning) of learners' competencies could be more effectively integrated into teaching and learning. Three key themes emerged. If competencies were to become an effective part of practice, first, there had to be **a balanced and coherent approach to assessing student competency**; second, it was important to **ensure that approaches to assessment were fit for purpose**; and third, a **long-term strategy to integrate new approaches across systems** was necessary.

The three key themes are complex and inter-related. The complexity is, in part, recognised by the authors who acknowledged the need for each message to be contextualised in the culture and history of individual member states. Advice related to each of the three themes was targeted towards national and regional policymakers to support their attempts to build effective classroom based formative and summative assessment of competencies.

To ensure a balanced and coherent approach to assessing student competencies, the European Commission (2023) proposed it would be necessary to

- develop collectively, a clear, shared vision and aims for student learning, personal development and well-being, involving a broad set of internal and external school stakeholders.
- ensure coherence across the overall vision, curriculum, learning standards and assessment (external and classroom-based, formative and summative) between primary and secondary schools and between secondary and university levels. New approaches to assessment may be needed as school systems introduce competence-based curricula.
- embed the core principles of inclusion, equity and participation in the design and implementation of assessment of student competencies. At classroom, school and policymaking levels, taking account of learners' views of assessment practices is essential.
- encourage dialogue across networks and in schools (e.g., school networks, teacher professional networks, teacher educators, wider stakeholder groups). Dialogue is also crucial between educators, learners and their parents/carers to support the introduction and development of new curricula and assessment methods.

To ensure student assessment approaches are 'fit for purpose', it would be necessary to

- focus on student learning, development, and well-being, rather than solely on academic results.
- share high-quality research and good practice in classroom-based assessment that puts learners at the centre of the assessment process, and which may inspire broader take-up across school systems**.**
- develop assessment as an integral part of teaching and learning processes, beginning in initial teacher education programmes. This should address assessment of competencies in various subject areas and cross-cutting competencies. Support for ongoing professional learning communities and other networks, as well as continuing professional development (CPD) programmes to support teachers, is also essential.
- encourage teachers to build a more rounded view of student progress using a range of assessment approaches, including standardised and alternative approaches that provide information on, e.g., cross-cutting competencies, personal and social development, learning to learn.
- trust teachers as professionals as an essential component of accepting alternative, non-standardised assessments of learner competencies.
- invest in further research on effective formative assessment practices and how to adapt the next steps in classroom learning processes in the context of key competencies.
- invest in further research into new, more effective ways to report learners' progress, and maintain trust-based relationships with parents and learners.

To develop a long-term strategy to integrate new approaches to assessment across systems, it would be necessary to

- ensure that long-term change strategies follow the vision for education, building on existing national and regional contexts and cultures.

- introduce change over time, piloting and refining new assessment approaches in selected schools and school networks before introducing system-wide change**.**
- support school leaders (school heads, department heads and other leaders) to lead whole-school change, involving all school staff, learners, parents, and other stakeholders in the introduction of new approaches to assessing learners**'** key competencies**.** Leadership of collaborative school evaluation (internal and external) and school development plans is essential to effective change processes.
- guarantee teachers autonomy in integrating new approaches to assessment, providing access to professional learning opportunities, practical guidelines, tools and examples of good practice.
- align teacher certification examinations, professional standards, teacher appraisal and school evaluations, ensuring that all require teachers to demonstrate competencies related to classroom-based summative and formative assessment of learner competencies.

The EU Commission (Looney et al, 2023) report also identified several challenges common internationally to changing assessment practice. These challenges are listed below. The group argued that culturally appropriate ways to address these challenges should be part of the planning process in each nation.

- Parental resistance to changes in assessment: it is important to acknowledge the tendency for parents to look for evidence that relates to their own school experiences in the experiences of their children. Engaging parents in discussions about the rationale for the move to include key competencies will be crucial.

- Teacher resistance to new assessment policies and practices: resistance is often linked to the practical challenges of competency-based curricula and assessments. In secondary schools, teachers may feel the need to teach to 'high stakes' assessments rather than the broader curricular aims.

- Challenges in ensuring that new assessment approaches are consistently implemented across systems; professional engagement is crucial.

- Particular problems re a lack of attention to social-emotional learning and development, as well as to ways to assess them.

- Insufficient opportunities for learners and other stakeholders to share their experience and views on assessment at policymaking or school and classroom levels leading to them resisting change.

The report concludes by emphasising the importance of competency orientated education both in content and in process.

'*These concerns all resonate with longer-term trends in learner assessment as highlighted by stakeholders across Europe, including: the ongoing shift towards competence-oriented education and assessment; changes in the labour market and the need for learners to develop new competencies throughout their lives; digitalisation of education and technological innovations; growing socio-economic inequality in Europe and increasing diversity in schools and classrooms due to mobility and*

migration, and a need for more inclusive assessment practices; and an ongoing focus on developing standards-based curricula and strengthening evidence-based policymaking '(EU, 2023, p38).

The examples of practice provided in this report from a wide range of countries across Europe, including Ireland, relate most commonly to the assessment process across the curriculum and the messages from the report are clear. For young people to thrive in the fast-changing world in which we live, curricula, pedagogy and assessment must change.

Two OECD reports develop ideas about assessment linked more specifically to the assessment of key competencies. The first, edited by Natalie Foster and Mario Piacentini (OECD, 2023) considered the kinds of assessment innovation required to measure and support complex skills. They argue that assessment has a crucial role to play in signalling to an education system that competencies matter; for what is assessed will inevitably influence what is taught. Assessment will also serve to illustrate what students should achieve. The 21st century competencies, perceived by educational stakeholders internationally as crucial, have appeared in a variety of frameworks but making this vision a reality will require curriculum, pedagogy and assessment to be well aligned (Wyse et al, 2016).

There will be a need for 'next generation assessments', assessments that allow students to demonstrate what they can do in authentic, close to life contexts and will evaluate how students learn new things. Much of what is advocated in terms of large scale, next generation assessment is in the early stages of design internationally. However, there are ideas that might help inform the direction of travel for education systems currently exploring how best competencies might be assessed.

First, it is helpful to define what assessment being aligned with learning and teaching means. Pellegrino (ibid, OECD, 2023 p 16) defines assessment as a constituting a process of *'reasoning from evidence guided by theory and research on critical aspects of knowledge and skill'.* This means, students should have opportunities to demonstrate what they know, understand and are able to do. Assessment should gather evidence and produce information that can be used to draw reasonable inferences about student progress in relation to what is designated to be important.

For assessment to be able to do that, Pellegrino argues that the curriculum should be clear about what foundational knowledge is necessary to enable students to apply 21st century competencies in different areas of the curriculum. 21st century competencies and content knowledge are equally important. In addition, the curriculum should define developmental progressions so that students are *taught 'the right foundational knowledge to support the integration of 21st century competencies at the right time'* (Pellegrino, OECD, 2023 p 34). This offers teachers information about what they can, in general, expect from students at different stages in education.

Approaches to teaching that combine carefully designed direct instruction and opportunities to apply new knowledge in novel situations using 21st century competencies, e.g., in hands on inquiries, offer the best chance of learners deepening their knowledge sufficiently for it to be remembered, recalled and applied in other purposes (Darling-Hammond et al., 2019). This implies that opportunities to engage with 21st century competencies should be integrated systematically and strategically throughout the curriculum.

Pellegrino (OECD, 2023) proposes that student centred learning approaches such as project-or problem-based learning offer significant promise. They provide students with opportunities to work on real-life problems in authentic and meaningful ways. Such approaches enable students to collaborate and to research and evaluate information using a range of resources; to use knowledge

and skills rather than only passively memorising information. He argues that as real-world problems are rarely limited to a single area of the curriculum, this approach also encourages students to make connections across content areas using competencies such as critical and creative thinking, problem solving and collaboration (Paniagua and Istance, 2018).

These approaches to curriculum and pedagogy lead to the kinds of methodology best suited to high quality assessment. Gathering evidence of key competencies is best undertaken in contexts and tasks that are as authentic as possible designed to meet the needs of all learners. Extended tasks that allow all students to participate, 'low floors', but have 'high ceilings', i.e., where student progress is not limited by the nature of the task. In addition, thinking about the desired outcomes, with a clear focus on what these would look like, offers the potential for 'Backwards Design' (Wiggins and McTighe, 2011), the design of curriculum and learning and teaching that would lead to those outcomes.

Pellegrino (2023) argues that having separate assessments for individual competencies is unlikely to be helpful. 21st century competencies are strongly interrelated in real life contexts. Experiences that will support learners to face the kinds of challenges they will encounter throughout their lives should expose students to the interrelated nature of competencies. For example, Piacentini et al (2023, pp 49-54) identify five design innovations to support the development of high-quality assessment of 21st century competencies.

- Allow for extended performance tasks – opportunities for students to act together to, e.g., evaluate resources, make choices, prioritise, try out strategies and adapt.
- Explicitly account for domain knowledge in assessment design and reporting- competencies such as creativity, critical thinking or communication are skills not used in a vacuum. Students' ability to use these skills will always be in a given situation and their performance will depend on their knowledge of the context and the strategies they use (Mislevy, 2018). Identifying the knowledge students have should become an integral part of the design and assessment process.
- Provide opportunities for productive failure and learning. Strong claims can be made about how prepared students are to learn new things by studying how they work on problems they have not previously encountered (Roll et al., 2011). One promising method is 'invention activities' where students, asked to solve problems requiring concepts they had not yet been taught, were better at transferring their knowledge to new applications (Loibl, Roll and Rummel, 2016).
- Provide feedback and instructional support during assessment. This supports the process in a variety of ways, e.g., engaging apparently disengaged students, addressing confusion, helping guide students by limiting options, identifying critical features, modelling the development of a solution, inviting students to think aloud to identify misunderstandings
- Cater to different ability levels by using challenges with "low floors, high ceilings" see above.

The OECD report (2023) provides a range of examples of how these ideas might be put into practice that consider how such approaches might be integrated within and across domains.

Traditional approaches to assessment tend to focus on allowing students to demonstrate knowledge they already have. Piacentini et al (2023) argue that interpretation of an individual's performance may not provide *'valid inferences on that person's capabilities to think, act and learn in real-life situations outside of the test context'* (p47). To reduce this misalignment, the authors suggest two steps.

- The first is to understand the implications of research insights to support the mental structures that support problem solving and learning.
- The second involves creating an internally consistent system of teaching and assessment practices that offer deeper learning experiences to prepare students for future learning. This has to be supported by approaches to assessment that discern how effectively students have engaged with these deeper learning experiences.

There are then a number of ideas from research about the nature of competencies and the kinds of learning and teaching that might best support students as they develop competencies. Three insights from research are also useful for planning to take forward the assessment of key competencies in Ireland. These hold true for learners and teachers**.**

Developing expertise is a social process:

People develop expertise in different domains

(Mislevy, 2018), for example, in different areas of the curriculum *'Students learn more deeply when given the opportunity to engage in activities that are realistic, complex, meaningful and motivating, and when they feel part of a community of learners that they can call on for support'* (P47). Working with teachers as a community of 'experts' students are *'learning to use the tools, languages and strategies that have been developed within that community*'. In the context of school education, 'novices' would refer to students at the beginning of Senior Cycle and 'experts' as students at the end of Senior Cycle.

Experts engage in reflective practices and can adapt to new situations:

There is consistent evidence to suggest that 'experts' differ from 'novices' in that experts have well developed metacognitive skills. They know when to apply a procedure, plan, monitor progress, question the limitations of their own knowledge and avoid simplistic interpretations, individually and when working with others. (Hadwin, Järvelä and Miller, 2017). Metacognition does not necessarily develop through traditional educational practices. However, it can, and should be, taught in context. Reflecting on learning is a crucial part of this process.

Expertise requires specialised and organised knowledge:

Effective problem-solving approaches involve using deep knowledge of the domain. Deeper knowledge is not represented in sets of facts, but knowledge, well structed into schema, that is closely linked to contexts and conditions for use. Students would find it extremely difficult to use competencies in a situation where they know nothing about the topic. Teaching these higher-order thinking and behavioural skills should be embedded within different learning areas of the curriculum and, where possible, should encourage students to establish connections between different disciplines.

Thinking about assessment should refocus to consider how students might be supported to show the best of what they know, understand and are able to do. For that to happen, there are implications for curriculum and pedagogy. Teachers should have opportunities to develop their understanding of progression in problem solving and the kinds of teaching and learning experiences that would allow learners to demonstrate evidence of the progress they are making. This approach may be more closely aligned to assessment as a formative process, where assessment is used to support learning and progression.

Within that context, the kinds of experiences that are likely to be most beneficial to learners will have them

- working collaboratively to tackle authentic challenges with the space to develop and to try out problem solving strategies
- being taught metacognitive approaches and having opportunities to reflect on their progress in them. Students need to develop the knowledge, skills, and disposition to question information, ideas, and experiences so that they learn about these competencies as tools that they can use in other contexts and for their understanding of how they learn best. Hipkins (2007) suggests, for example, that in metacognition, students learn about their thinking so that they can adapt the thinking tools they currently possess when they encounter a new learning challenge
- encountering deep knowledge in different domains, i.e., knowledge that is well structured into schema, closely linked to contexts and conditions for use.

In conclusion

This first section has explored recent thinking and research on assessment and key competencies, an issue emerging from the McGuiness (2023) report as worthy of further investigation. The evidence is clear and consistent. Key competencies are becoming an increasingly important part of curricula internationally as countries seek to ensure that young people are prepared for the uncertainties of the future. However, key competencies also matter for students now, helping bring purpose to schooling, encouraging motivation and acting as strong indicators of success and progress beyond school. Most importantly, the knowledge, skills, values and dispositions within key competencies are interdependent and that interdependence should be reflected in curriculum, learning and teaching and assessment. Assessment must change if it is to serve the vision of key competencies well. For example, it should include tasks that are more authentic, i.e., closer to real life and students should be supported to show the best of what they know, understand and are able to do.

Section Two: Key Competencies in Action in International Contexts.

The first section of this report explored recent thinking and research on assessment and key competencies. Competencies are becoming an increasingly important feature of curricula internationally as countries attempt to ensure that young people are prepared for the uncertainties of the future. There is also recognition that key competencies matter not just for students' futures but are important to students as they progress through school. They support student success and progress. In their analysis of national education documents in 102 countries, Care, Anderson and Kim (2016) found that most countries include 21st century competencies within their educational vision statements. However, how progress is discerned as students develop key competencies remains an issue of international concern.

The conundrum is:

- since there is strong evidence that key competencies are a crucial part of what it means to be an educated citizen and competencies have long been a part of international discourse on the future of education- why has progress towards their enactment in schools been so challenging?

Since the development of key competencies and their assessment is an issue of interest internationally, this next section explores how key competencies are being introduced and developed in four different educational contexts. As indicated previously, the three nations identified in the McGuiness report (2023) are included to provide continuity; British Columbia, New Zealand and Scotland,. A fourth country, Singapore, has been included as a highly successful education system where, like Ireland, high stakes examinations have been part of their culture and is also currently in the process of reform to ensure that its education system remains fit for the future. The nations are presented in alphabetical order. The interviews conducted included a cross-section of teachers, school leaders, assessment professionals and policy-makers.

The four nations all have curricular aspirations similar to those of Ireland. As Ireland plans to develop a key competencies approach to curriculum and assessment, the review of literature suggests that there are four issues that are important to consider when considering how best to assess key competencies. These four issues formed the basis of interviews with policy makers and practitioners from British Columbia, New Zealand, Scotland and Singapore. By gathering information beyond an analysis of policy documentation, the intention was to find out more about what was happening in practice as policy developments were being undertaken; information that might identify issues to inform thinking in Ireland as future plans are developed. The issues explored with each nation were:

- How are competencies defined?
- How embedded are they in teachers' practices?
- How are competencies assessed, formatively and summatively, and to what extent are key competencies part of qualifications?
- Crucially, how are the four nations seeking to build capacity in and beyond the profession in key competencies?

Finally, each nation was asked to identify any additional information they would wish to offer. The different ways in which individual nations responded to that question are, in themselves, interesting.

2.1 How are Competencies Defined?

One of the major challenges identified in the literature in key competencies in curriculum and assessment related to definition. Each of the four case study countries defined competencies in different ways although there were significant areas of overlap.

In **British Columbia** the term used is core competencies. They are defined as the intellectual, social, and emotional proficiencies and are coupled with literacy and numeracy. They are seen as lifelong, in schools from kindergarten to Grade 12 and the curriculum is built around them. The core competencies are communication – includes the sub-competencies 'communicating' and 'collaborating'; thinking – includes 'creative thinking' and 'critical and reflective thinking'; and personal and social – includes 'personal awareness and responsibility', 'positive personal and cultural identity', and 'social awareness and responsibility'.

Competencies in British Columbia are described in two ways. Core competencies that develop across the curriculum, and curricular competencies that are explicit statements of what is expected at each grade level in each area of learning. Core competencies are embedded in every area of learning of the K-12 curriculum. Thus, each area of learning includes curricular competencies and content. Both are compulsory, the term used is 'mandated'. Each area of learning in the curriculum also includes 'big ideas' and 'elaborations', which are not mandated. The British Columbian website offers examples of how these ideas are related in practice, e.g., see Chemistry Grade 12 (age 17/18).(https://curriculum.gov.bc.ca/curriculum/science/12/chemistry)

Learning standards in British Columbia are defined as the curricular competencies and the curriculum content. Since core competencies are embedded within the curricular competencies, the core competencies are also embedded within the learning standards. For example, 'applying and innovating' under the curricular competencies for Grade 12 Chemistry, includes the learning standard expectation that students 'Contribute to care for self, others, community, and world through individual or collaborative approaches; co-operatively design projects with local and/or global connections and applications; contribute to finding solutions to problems at a local and/or global level through inquiry; implement multiple strategies to solve problems in real-life, applied, and conceptual situations; and consider the role of scientists in innovation. This relates to the communication, thinking and the personal and social core competencies.

The 'new' **New Zealand** curriculum, introduced in 2007 (currently being refreshed), foregrounded the key competencies as the dispositions for learning which support teaching and learning in the curriculum. The five key competencies are: thinking; relating to others; using language, symbols, and texts; managing self; and participating and contributing. These sit alongside the curriculum values, learning areas, achievement objectives, and principles in the curriculum.

Schools have autonomy to develop the key competencies as part of the New Zealand curriculum and, when the 2007 curriculum was introduced, they were presented in the New Zealand curriculum but developed by schools in their local context. Teachers reflected on what the key competencies meant for them and their students locally and used them to give students voice and agency. They continue to be prominent in the language in schools and many schools have used the key competencies to develop their school values.

In New Zealand, there is a very strong focus on the key competencies in the learning outcomes for students, and the key competencies are explicitly embedded in the learning outcomes. At secondary level, for example, in science where a learning outcome might be 'students are able to show understanding of scientific method', they will need to demonstrate managing time and resources (linked to 'managing self'), collaboration ('relating to others' and 'participating and contributing'), and scientific language skills ('using language, symbols and texts'). All teaching and learning at this level also require students to demonstrate the key competency of 'thinking' and, in PE, as another example, there is a strong focus on the learning outcomes 'relating to others'.

In the learning intentions at primary level, there is commonly a focus on 'relating to others' (e.g. on listening to others). It is common practice to see the key competencies expressed as part of the intended learning intentions, learning outcomes and success criteria for a lesson on the board in the classroom.

In **Scotland**, the key competencies are defined as the four capacities on which the curriculum, '*Curriculum for Excellence'* is based. These are successful learners; confident individuals; responsible citizens; effective contributors.

The four capacities were introduced in 2004 and there was correlation with the four contexts for the curriculum, i.e. the intentions were written into the four contexts for the curriculum. The four contexts are: opportunities for personal achievement; interdisciplinary learning; curriculum areas and subjects; and the ethos and life of the school

Progression in the curriculum is described through experiences and outcomes. Education Scotland explains the importance of the term. They argue that the title 'experiences and outcomes' recognises the importance of the quality and nature of the learning experience in developing attributes and capabilities and in achieving active engagement, motivation and depth of learning. An outcome represents what is to be achieved. (https://education.gov.scot/media/wpsnskgv/all-experiencesoutcomes18.pdf). The Experiences and Outcomes of Curriculum for Excellence are intended to incorporate the four capacities.

However, a provocative thought paper 'Exploring the Four Capacities' (2022) suggested that the capacities were so embedded in the curriculum as to be invisible, and that teachers struggle to find and articulate their use of the capacities. There is also a view that they are also not sufficiently overt in the Quality Indicators used by the Inspectorate.

The capacities are interpreted flexibly. There is regional variation in what the four capacities mean to teachers and schools; what they mean will vary e.g. between a rural, island environment and a city, and between one urban environment and another. From the practitioner perspective also, the capacities will mean different things for different children as they are adapted to meet the needs of the child.

How the four capacities are embedded in the learning outcomes for students varies across the (age) 3-18 journey. Schools are now better at including them in learning outcomes and are trying to create learning opportunities that link directly to the four capacities. However, contextualization and adaptation require teachers to be creative. Some fly and flourish; others are more inhibited.

In **Singapore,** there are enhanced 21st century competencies. The 21st century competencies were originally introduced in 2010 The original 21st century competencies were refreshed in 2023 to ensure that they best reflects the competencies required by modern society and continue to be fit for purpose to guide Singapore's educational efforts and help students to develop and prepare them for the future. To do this they completed a 'stock take' of the competencies which resulted in placing greater emphasis on adaptive and inventive thinking, communication, and civic literacy.

They include:

- The six core values of respect, responsibility, resilience, integrity, care, and harmony.
- The five social-emotional competencies of self-awareness, self-management, responsible decision-making, social awareness, and relationship management.
- The three emerging 21st century competencies of critical, adaptive and inventive thinking; communication, collaboration and information skills; and civic, global and cross-cultural literacy.

Each subject syllabus includes a section explaining how teaching and learning of the subject aligns with the development of particular 21st century competencies. In addition, schools run specific programmes and/or enrichment activities focused on the development of the 21st century competencies.

The 21st century competencies are not explicitly embedded in the learning outcomes set out in the syllabuses for individual subjects. They are, though, often expressed in a school's vision or mission for its students.

2.2 Planning for Key Competencies in Learning, Teaching and Assessment

One key indicator of how embedded competencies are in the curriculum is the extent to which these are built into the processes of teachers' planning, as part of teaching, learning and assessment.

In **British Columbia**, the inclusion of core competencies and their assessment in teacher planning varies depending on the individual teacher. There is a perception that provincial government needs to be more intentional with support for how this might happen. Illustrations and examples are available on the British Columbia curriculum website. These indicate and clarify the 'what' of the requirements for teaching core competencies, but they do not specify the 'how'. That is, they provide a variety of exemplars and resources to support core competency development, including examples of how students have demonstrated their developing competency. These are intended as a support for teachers, given that teachers have autonomy on the implementation of the core competencies.

For literacy and numeracy, the provincial government publishes a series of resources – the British Columbia Learning Pathways are designed to support teachers in developing students' literacy and numeracy skills in all learning areas. The resources demonstrate how literacy and numeracy are integrated into the entire K-12 curriculum, with all forms of classroom and provincial assessment, and with student reporting. Collectively, the resources support teachers in developing students who can think critically about the world around them, communicate their ideas and information clearly and authentically, and demonstrate their personal and social competencies in a meaningful way. The Learning Pathways aim to support students who learn in a variety of ways, at different rates, and in different contexts, and the resources aim to support teachers with planning, teaching, classroom assessment, and reporting of student learning.

In **New Zealand,** the incorporation of competencies into planning varies across schools and phases, but many teachers use the key competencies in planning their lessons and in planning their formative (in-class) assessment. Teachers will also often ask students to 'self-assess' their demonstration of the key competencies. While teachers and schools have autonomy, in some instances schools also use the key competencies in school reporting, or in reporting to parents.

In **Scotland**, the use of Experiences and Outcomes to describe progression in the curriculum should mean that as teachers plan, competencies are in-built to planning. However, it was reported that the extent to which the capacities are explicitly built into planning varies greatly; some teachers may include the four capacities, and/or assessment, in their planning documents, but there is recognition that this needs greater focus. It is interesting to note that the curriculum in Scotland is under review. The most recent thinking in Scotland seeks to 'declutter' the curriculum, to clarify the place of knowledge in the curriculum and to consider how best to authentically situate competencies, for example, English may be a natural home for critical literacy.

In **Singapore**, most schools/teachers include the 21st century competencies as part of their curriculum and some schools have been trying to develop rubrics to assess students' development of the 21st century competencies. This is very challenging and those being developed are not very rigorous; schools need the help and support of academics in developing these rubrics and some are working with academics.

Since the refresh of the 21st century competencies, there is growing interest from schools in discussing assessment of the 21st century competencies in their learning development networks/clusters, as they are aware that they need to evaluate progress.

2.3 Competencies and Assessment

We asked how teachers in the different jurisdictions assess key competencies.

In **British Columbia**, the assessment of competencies is unique to the individual classroom, but assessment of the core competencies is now more personalised, i.e. it focuses on the individual student, allowing for a greater differentiation. For example, for those students whose strengths do not lie in traditional academic areas, teachers personalise the assessment of core competencies to better meet their needs. This more personalised framework allows for more flexible approaches to assessment. For example, an oral presentation rather than a written text might allow a learner to demonstrate more of what they know and are able to do. Using a wider range of approaches to assessment creates a more dynamic system, e.g., it allows teachers to reflect the interests and motivations of individual students and offers opportunities for greater innovation and creativity. One student could demonstrate oral proficiency through a Haiku, for example, another through Slam poetry.

In British Columbia, there is some caution about inquiry-based learning being perceived as the solution for the development and assessment of key competencies in learners. They suggest that student progress in key competencies depends more on the student-teacher relationship and on the variety of teaching, learning and assessment approaches that teachers use to maintain student motivation and interest. Inquiry-based learning is one strategy, but understanding students, the purposes of assessment and matching both to the mode of assessment is more important. For example, outdoor classrooms are extending beyond kindergarten and elementary education in

British Columbia, and they can align well with the assessment of core competencies when purpose and intention are matched.

Developing expertise in assessing core competencies and values and dispositions, requires time. Previously, in British Columbia the assessment of core competencies was a contentious issue. For example, was it possible to assess core competencies? Should teachers be assessing core competencies? These concerns have reduced because teachers were given time to develop their own understanding of the competencies. The provincial government understood that, in introducing core competencies and their assessment, teachers were being asked to become learners to learn what works in different classrooms with different learners. Acknowledging that classrooms are complex places, and the role of the teacher is increasingly challenging, government recognised that teachers needed time to engage with this type of learning. Having teachers develop skills in the assessment of key competencies is a long-term investment designed to encourage teachers to assess students holistically to become the citizens of the future.

British Columbia describes its current position as 'having planted the competency seed', it is now germinating and the roots are taking hold as teachers begin to engage with, implement and assess competencies.

In **New Zealand**, teachers assess key competencies formatively and often ask students to self-assess how they have demonstrated the competencies.

As key dispositions for learning that support children to become lifelong learners, key competencies form part of formative in-class assessment, e.g. developing and demonstrating self-regulation or metacognition.

In the secondary phase, internal school-based assessment is perceived to lend itself best to assessing the key competencies, for example, through observation. Some assessment approaches are seen to be appropriate for credentialing purposes, e.g., a video recording observation of key competencies 'in action'. Other assessment approaches are identified as not appropriate, e.g., it is very difficult to assess key competencies in a written examination. Written examinations can and do assess subject-specific competencies in New Zealand, but not the wider competencies. Key competencies can only be assessed within a context (and that context can vary significantly).

Progress in competencies is now differentiated in New Zealand. In the secondary phase, development groups have developed criteria to distinguish between 'merit performance' and the 'excellence' grades in key competencies. Student achievement for the senior secondary National Certificate of Educational Achievement (NCEA) qualification is now graded as 'achieved', 'merit' or 'excellence'.

Values and dispositions are not assessed in New Zealand; this is not culturally appropriate. The key competencies emerge differently in individual schools and this may involve aspects of values and dispositions but no assessment is made in relation to the individual development of values and dispositions. Key competencies will look very different in Māori-medium schools. In a population as diverse as New Zealand, the assessment of values and dispositions in relation to individual students is seen as problematic.

In **Scotland**, the assessment of the key competencies has been given less attention than it might because of the dominance of the attainment agenda and the school improvement framework. These have taken up much of the oxygen, and there has been a major focus on assessing student

performance in literacy and numeracy. Since evidence is not gathered on progress in all four capacities, those capacities that are measured dominate.

There are potential tensions between an aspiration that each child in every school should have an equitable educational experience with regional variations designed to meet the differing needs of different individuals and communities. In Scotland, the school improvement agenda led to some governmental discomfort with the regional variation of the four capacities. Attention turned to equitable experiences for young people being linked with, e.g. students' entitlement to study a certain number of subjects, rather than meeting students' needs based on the four capacities. This focus on targets was perceived to have had a negative impact on progress related to the four capacities.

At the level of the school, thinking in Scotland is moving from gathering information on individual capacities, towards reflecting on the cumulative information in a school that reflects the four capacities and their impact, e.g. in the values, culture and ethos in the school; the awards ceremonies which allow the community to see the full range of 'successful learners' in a school; the student destination information for a school; and the agency students in the school demonstrate. It is the totality of evidence which provides information about the balance of the offer in the school and the impact of the four capacities on the experiences of students.

Assessment thinking in Scotland suggests that progress in the capacities should not be linked to achievement thresholds but rather through questions such as "did you progress this year?". By using the four capacities to design the offer to students, young people become capable of articulating their own skills, values and dispositions. A student's disposition influences his or her participation and evaluating students' participation tells teachers much about their disposition.

Teachers are identified as key players in discerning progress in key competencies. To do that well, they need opportunities to explore the four capacities in the round, and to have rich conversations as professionals about what it means to assess the four capacities.

Scotland does well in OECD assessments of social and emotional skills and there is a view that this may be a result of the four capacities approach.

In **Singapore**, teachers are aware that they need to evaluate progress in developing the 21st century competencies, but the focus is on the evaluation of programmes intended to develop the competencies. This is very different from providing direct feedback to students on their individual development of competencies. In Singapore, this type of feedback does not happen regularly. Evaluation of student progress in the 21st century competencies more often come from students' self-reflection, with teachers asking their students to reflect on their development of competencies.

Students in Singapore need to understand that the development of the 21st century competencies is a lifelong process. They need to develop skills of metacognition and meaningful reflection, i.e. the ability to understand where they are in the development of the competencies. Building agency and ownership of their development in key competencies through understanding and self-reflection is the preferred approach. The teacher's role is to facilitate the student's agency, ownership and abilities so students can continue to develop the competencies beyond school and understand that their development is a lifelong process.

The assessment of values and dispositions is perceived as problematic in Singapore. Attempts to measure values and dispositions may not be particularly useful. There is a limit to what educators

can learn about children's values and dispositions from observation. Assessment of dispositions and values can be particularly challenging. Students can engage in self-assessment but need guidance and success criteria to guide this self-assessment.

Student portfolios are seen to have potential as one way of providing formative evidence on a student's development of values and dispositions. Some students, for example, collect evidence of how they demonstrate values and dispositions (through a process of self-evaluation), and discuss this formative evidence with their teacher. Information from these portfolios is individual and evidence from them cannot be extrapolated to provide information about the acquisition of values and dispositions across the whole school population. Schools are encouraged to include school-based projects as part of teaching and learning to enable students to begin the process of self-evaluation.

In Singapore, perception surveys provide qualitative data giving an indication of the development of values and dispositions in school classrooms. This can provide information on areas in which progress has been made and areas for future focus. Feedback is considered an important aspect when assessing key competencies. This includes the formal and informal interactions that teachers have with their students. They may provide feedback where they see students working in the classroom and may suggest ways of improving having observed the students working. They also encourage student self-reflection and proposing the next steps.

There are some challenges where the competencies cannot be adequately assessed using either pen and paper or project work. In these cases it can work if the teachers can see the competency in action over time where they can observe the students and the students can also document their experience (for example the use of journalling).

2.4 Key Competencies and Summative Assessment

Much of the literature around the assessment of key competencies focuses on assessment as part of learning and teaching. However, to what extent are countries beginning to consider the summative assessment of key competencies and, in particular, how is the assessment of key competencies being tackled in the equivalent of the Senior Cycle?

In **British Columbia**, four provincial assessments focus on literacy and numeracy skills: the Foundation Skills assessment in Grades 4 and 7; a literacy assessment in Grade 10; a numeracy assessment in Grade 10 and a literacy assessment in Grade 12. The Core competencies are built into these literacy and numeracy assessments to ensure a cross-curricular approach and that the concept-based curricular competencies are the underlying focus. For the Foundation Skills assessments, for example, there is a pre-activity which necessitates students working in collaboration and there is self-reflection at the end.

High stakes assessment is not a feature of education in British Columbia. The Grade 4 and 7 provincial assessments take place early in the school year and are intended to provide a snapshot of system performance. The three Grade 10 and 12 literacy and numeracy assessments are a high school graduation requirement, but they are not high stakes in that students can take them up to three times.

Although currently, these assessments are cognitively focused, there is a desire to see the incorporation of more non-cognitive assessment. A better balance between cognitive and non-cognitive assessment is perceived to promote a more holistic assessment of the student. Discussions with parents and educators is often currently dominated by the theme of generative AI; the core competencies speak to those competencies that AI will have difficulty in mastering.

The reporting policy introduced in British Columbia in 2023 includes student self-reflection to ensure that teachers include the core competencies in their teaching. This policy removed letter grades for kindergarten to Grade 9, instead using the provincial proficiency scale. The proficiency scale asks teachers to place student learning on a learning continuum: Emerging, Developing, Proficient or Extending. *'Each student comes into each learning situation with their own experiences and background knowledge. A student does not necessarily begin at Emerging or Developing at the beginning of the school year. Similarly, students do not reach Proficient only at the end of the school year. Reaching Proficient is not the end of learning; if a student enters a learning experience as Proficient or achieves Proficient during the school year, the goal becomes to further enhance their learning.'* (https://www2.gov.bc.ca/assets/gov/education/administration/kindergarten-to-grade-12/unpacking-the-proficency-scale-support-for-educators.pdf)

The 2023 policy states that student reporting should provide clear, concise, descriptive feedback, aligned with the provincial proficiency scale. This policy change aimed to improve feedback to students, reduce the reporting burden for teachers, and align curriculum and assessment. The removal of letter grades was highly contested and ongoing reaction is mixed. Currently, there are candidates for the provincial elections (October 2024) who promise to bring grades back.

In **New Zealand**, there is no summative assessment of learner progress in the key competencies.

The senior secondary National Certificate of Educational Achievement (NCEA) is standards-based and will include reference to the key competencies if a particular standard relates specifically to the key competencies. Subject competencies are assessed in secondary education in New Zealand, not key competencies. End-of-year school reports will usually refer to the key competencies. Some schools provide references for students at the end of Year 13 and these may relate to the key competencies, specifically to those aspects of interest to employers. Senior secondary assessment (for the NCEA) has not changed as a result of the introduction of key competencies, although the key competencies may have influenced the way in which the senior secondary standards are written.

The key competencies are being considered as part of the current curriculum refresh – but from the perspective of incorporating relevant aspects of the key competencies in the subject competencies. New Zealand is also looking at different approaches to assessment as a result of the shift from curriculum recall to curriculum application – to 'know and can do'. Certification, for students who are performing at a level below the NCEA taking foundation qualifications, is based on the key competencies.

In **Scotland**, external summative assessment changed little when the four capacities and the Curriculum for Excellence were introduced, i.e. the current examination structure pre-dates Curriculum for Excellence. However, qualifications were intended to assess all four capacities. The current curriculum reform agenda in Scotland focuses on the senior secondary phase with a view, potentially, to making the whole school experience more coherent and enabling demonstration of the four capacities throughout the curriculum. This would include more overt recognition in the senior phase and in senior phase examinations. For example, there is a proposal to introduce a senior secondary diploma (IRQA, 2023) which, in addition to subject qualifications, will include an

interdisciplinary project and a personal pathway. If learners are able to express their achievement in terms of the four capacities that, in itself, is assessment. If the curriculum is designed in such a way as to allow students the opportunity to express their achievement of the four capacities, that is the assessment.

In **Singapore**, there is no summative assessment of learner progress in the 21st century competencies. Schools may, though, include the competencies in school report cards (provided each term) and they may also be discussed at regular parent/teacher/student meetings (parents' evenings). In Grades 1 and 2 of primary education, there has been a move away from grades to evaluate children's performance in academic subjects. Performance is instead expressed through them receiving feedback on their dispositions.

External summative assessment is changing in Singapore. Beginning with the 2024 Secondary 1 cohort, the previous secondary streams (Normal (Technical), Normal (Academic) and Express) are being removed to allow students greater flexibility to take subjects at different subject levels as they progress through secondary school, but this is not related to the 21st century competencies, and there have been no changes to external summative assessment as a result of the introduction of the 21st century competencies. Students' school graduation certificates include a description of each student's academic and non-academic achievements and personal qualities and, as such, may refer to the 21st century competencies.

Interestingly, the Ministry Of Education in Singapore has broadened the Higher Education admissions system to rely less on academic grades, and more on other meritorious yardsticks, so that the full range of an individual's aptitude and attributes can be taken into account. For example, universities are increasingly employing a broad set of qualitative assessments, including interviews, aptitude tests and portfolios, to assess an applicant's potential and skills such as thinking and communication, skills which are seem as essential for lifelong learning.

2.5 Building Capacity in Key Competencies With and Beyond the Profession

A major issue in the development of key competencies relates to building capacity in the profession. To explore this issue within the four nations, we began by asking how competencies had been introduced to teachers. Second, as the importance of sustaining a long term commitment to the development of key competencies is a consistent message from the literature, we asked how individual countries had sought to build capacity over time. Third, given the relative unfamiliarity of the concept of key competencies to wider society, we sought information on whether or not this had been an area tackled in the various jurisdictions.

2.5.1 Introducing Key Competencies

In **British Columbia** from 2012-2019 a significant redesign of the kindergarten to Grade 12 curriculum (ages 5-18) was undertaken. The introduction of the core competencies was part of this redesign. The provincial government developed a concept-based and competency-driven conceptual frame. The new curriculum and the core competencies were developed in tandem by a large team. Teachers were involved in both the curriculum development and core competencies teams.

The new curriculum approach was introduced to teachers in discussions and professional learning sessions, often held online to maximise participation. Some teachers were very engaged and eager to

develop their pedagogy. However, the redesign of the curriculum was completed just before the pandemic. The new system is not yet fully implemented as not all teachers were as keen or engaged.

In implementing change of this nature, British Columbia expects change to take time and acknowledges the need for a clear implementation plan.

The core competency approach within the redesigned curriculum is becoming an increasing part of classroom teaching and learning. The introduction of a new student report system in 2023, which mandates student self-reflection on the core competencies has promoted an increased focus on competencies amongst teachers.

When the core competencies were originally being developed there was discussion of whether teachers should assess them. Some teachers considered that they would be making a value judgement rather than an assessment of student learning. The Ministry of Education and Child Care emphasised that the core competencies were already being assessed through the curricular competencies so offered reassurance that assessment was feasible.

However, having teachers move to the new system of teacher assessment of the core competencies, combined with student self-reflection and self-assessment of the core competencies was a significant change.

In **New Zealand,** when the revised curriculum was introduced as a draft in 2007, student participation in the key competencies was an important way of ensuring that they were place-based and localised. Community consultation and involvement was also key. This meant that families understood the key competencies, e.g. as part of the school values.

The draft curriculum was introduced in 2007. It was mandated in 2010. This gave schools time to become familiar with it and during that time teachers were offered multiple opportunities for professional development. This period of introduction led to significant buy-in from teachers and, in some schools, implementation happened before the mandated deadline.

Schools also worked together in clusters for the purposes of professional development. It was a challenge for some teachers to shift from a content-focused curriculum approach to a competency-focused approach. However, while it was challenging for some, it was also very liberating for others, who embraced the new curriculum.

In **Scotland**, when the four capacities were introduced, most teachers liked the approach. However, much of the development energy was spent on the 'what' and the 'why' of the new approach, rather than on the 'how'. If undertaking this change now, a different approach would be taken. The 50-50 rule suggests that at least half the time should focus on the 'how' of the approach. Working out how ideas will become real in classrooms is perceived to take five times as much energy and effort as what and why. In planning for major change, at least half the time available is spent with teachers on the 'how' of the approach; the implementation.

There cannot be a one size fits all way of introducing an approach such as the four capacities. A wide spectrum of teachers need a spectrum of support. Providing best practice 'case study' examples has been a feature of previous innovation approaches but may not be useful.

It is also important to pay particular attention to what any new approach, such as the four capacities, means for teachers as individuals. Thinking about themselves in relation to the four capacities can be tricky for some teachers; while some 'fly' with the four capacities and demonstrate brilliance in their application and implementation, others can struggle meaning classroom implementation can be 'stodgy'.

When the experiences and outcomes, including the four capacities, were introduced, the approach was completely different to what teachers were used to (the previous approach was 'here is the curriculum, please deliver it'). Teachers were not used to talking about the curriculum; they weren't 'curriculum makers' which they needed to be for the new approach to work. The introduction of the four capacities did mean that teachers began to take time to understand and think about the curriculum; they began talking about curriculum rationale and aspirational capacities for students, as they understood that the four capacities were the drivers for the whole curriculum.

It is important that professional development focuses on supporting teachers' creativity, drawing out their ideas in relation to the four capacities. Curriculum leaders in schools play a key role as facilitators who enable curriculum conversation.

In **Singapore**, the enhanced 21st century competencies have recently been 'reintroduced' to teachers, and schools have been encouraged to join nationally coordinated learning communities. These are professional discussion and development networks focused on the 21st century competencies. These communities are Ministry initiated, but some schools and local areas have also organised their own clusters/learning community networks.

Teachers find some aspects of the 21st century competencies challenging, in particular if they are not familiar with them, for example, the civic literacy competency. They are encouraged to join the learning communities/professional development networks to develop their skills, in collaboration and discussion with colleagues.

2.5.2 Building Capacity in Key Competencies over Time

A further theme emerging from the literature review is the need for support for teachers to be sustained over time. We asked the four nations what on-going support was available to teachers beyond the initial introduction of key competencies. We were particularly interested to identify strategies that countries believed to have worked well with teachers and what they identified as their future priorities.

British Columbia identified this as the area where there had been least investment and where implementation had suffered most. When the new curriculum was introduced, in the first two years, there had been a small number of province-wide development days on implementing the new curriculum, but this was not enough. A mixed modality of support and more varied approaches to the introduction of the new curriculum would have supported engagement with the core competencies more effectively. British Columbia worked quickly to bring the new system forward and thought it had engaged the K-Grade 12 community. However, post-2019, the provincial government realised that it had brought only some of the K-12 community along and, since that time, the Ministry of Education and Child Care has been focusing on implementation, going out to school districts to discuss what is needed in schools.

New Zealand believed that from the outset engaging with schools and teachers early was of the utmost importance. Allowing teachers early access to materials and timelines for implementation is also important. Sign-posting to examples of good practice and online workshops have been used to support teachers beyond the initial introduction of key competencies.

Key competencies have been part of the landscape for so long in New Zealand that they are embedded. They are valued and this has grown over time. Teachers know and understand that it is not enough to have content knowledge, and that they have 'permission' to value soft skills alongside

disciplinary knowledge. Importantly also, children recognise this and can, for example, articulate to their teacher when they are or are not, e.g., managing themselves well, listening to others, or sharing and being part of a group.

In **Scotland**, the view is that the four capacities need constant refreshment; teachers need constant reminders that the four capacities are the rationale for curriculum; the four capacities are ultimately what they are aiming to achieve, and they need to engage more deeply in that ensuring that this is part of day-to-day practice. Otherwise, much of the attention is focused on 'delivering' the experiences and outcomes.

The collaboration model is seen in Scotland to be key to effective implementation and leads to development and improvement, e.g. with local authorities, key schools, hubs working together and learning through collaboration.

In **Singapore**, teachers commonly ask how to infuse the 21st century competencies into their practice. There remains some tension between skills and competency development and curriculum content development, and other competing demands on teaching time. There is some guidance on infusing the 21st century competencies in teaching and learning in the individual subject syllabus documents, but there is also a risk that 21st century skills can become too infused or embedded in the curriculum, leading to the assumption being made that they are being covered when they may not be.

Teachers need support, as getting the balance right is not intuitive Time is needed to understand what the competencies mean, to consider implications for pedagogy and to explore what the competencies 'look like'- so for example, asking themselves 'what does adaptive thinking look like in my subject area.' They need time to consider the philosophy behind the competencies and to explore what the competencies look like at classroom level. This is supported by providing access to customised resources to support sense-making and teaching and learning, to help teachers to understand the construct and also by how the competencies are set out in the curriculum documentation. [see example from secondary Mathematics]. In some areas there is a belief that the Ministry needs to do more to intentionally foreground the 21st century competencies in individual subjects, both to support teachers and ensure the competencies remain visible.

2.5.3 Engaging Communities Beyond Teachers in Key Competencies

British Columbia identified the engagement of principals and vice-principals as key to the success of key competencies. Reflecting on what had happened in the introduction and development of competencies, BC felt that the involvement of teachers and engaging with the school district superintendents, those responsible for clusters of schools in individual districts, had been very positive. However, superintendents are removed from the day-to-day process and, although the co-construction of the new curriculum involved teachers, the Ministry could have done more to engage principals and vice-principals who have powerful leadership roles.

In **New Zealand**, the involvement of the community/parents was particularly important. The other key to the successful introduction of and implementation of key competencies was time and space for teachers to have the headspace to think about the key competencies and to create community around them.

In **Scotland**, there is recognition that teachers, teacher unions, parents and other stakeholders all need to be involved in developments. The 2019 refresh of Curriculum for Excellence, refocused attention on the four capacities. Teachers, teacher unions and other stakeholders were clear that the four capacities should be at the heart of the system. This was what gave them job satisfaction. Teachers remained committed despite their complexities and their continued need for support to put ideas into practice.

Simple tools explaining the four capacities and how to use them had been developed in the 2019 refresh, just before the pandemic, and schools found that families were able to use these to create at home educational experiences for their children.

In **Singapore**, in the Asian context, working with parents was crucial. Scholarly pursuit is admired by parents who respect academic subjects more than the 21st century competencies. Parents will often sign their children up for a wide range of enrichment activities, in the view that these will help them to develop the competencies, but this does not give the child the ability to develop and explore the 21st century competencies in their own space and time. The Ministry and schools need to do more to engage parents in prioritising the 21st century competencies and giving children the space and agency to develop them. This agency comes from the individual child/young person, not through enrolling them in enrichment activities. It is also considered important to clarify the purpose of education and the role of the teacher amongst parents as it is important that parents realise that it is not simply preparing students for examinations.

2.5.4 Individual Nations: Additional Issues

Finally, participants from each country were offered an opportunity to raise any issue they felt to be of particular significance.

British Columbia highlighted how important consultation with children and young people had been but perhaps not enough attention had been devoted to engaging with parents and caregivers. Although parents and caregivers understand the importance of academic, the value of the core competencies has to be explained. It is important that they understand their importance to learners; what they will help their children to achieve; and their importance for the holistic, lifelong development of learners and future citizens.

New Zealand focused on the importance of learners and the holistic nature of competencies. It is important to embed the key competencies and to involve children/students. In considering assessment of the key competencies, it is important to consider student self-assessment, peer assessment, and teacher feedback (‘catching them being good’).

Key competencies cannot be assessed outside of a context, for example, teachers and students are engaging in the key competencies when they are discussing a piece of work the student has produced or during the day-to-day process of teaching and learning. It is important not to pick the key competencies apart in attempting to assess them; they will lose their essence.

Scotland focused on how best to encourage practitioners to see the capacities as driver for the curriculum. Although it is possible to retrofit the ‘delivered curriculum’ to the four capacities, if you start with the four capacities as your rationale for the curriculum, learning becomes different. You know why you’re doing what you’re doing in school. There needs to be space for diversity and interpretation of how the four capacities can be used to determine the local school curriculum and

allow Curriculum for Excellence to do what it was intended to do; to support the unique curriculum journey offered in each setting.

Focusing a curriculum on the four capacities had worked well in Scotland when a group of more than 60 Ukrainian students arrived in a school. The four capacities allowed these learners to express their experience and achievements in terms of the capacities, even though their English was limited. Outdoor learning, across all ages, can also be a useful focus for development of the four capacities.

The ability to be curious and open-minded is key to the success of any change and can be a challenge; educators are uncomfortable with uncertainty. This needs to be borne in mind when introducing something new such as the four capacities.

For **Singapore**, the central issue was the profession. It is very important to really engage educators in the key competencies. They are the 'frontliners' and they need to understand what they mean and how to develop them. The level of significance that Singapore attaches to the development of key competencies is reflected in a statement from the education minister. This announces the establishment of a Centre for Competencies (Character and Citizenship Education). The centre is located in a university and staffed by a combination of researchers and teaching fellows.

'*Setting up the Singapore Centre for CCE shows MOE's unwavering commitment to nurture holistic, future-ready children and youth who can thrive in a turbulent world. I hope that the Centre will lead the way for CCE and signal its importance not just in our education system, but even in our larger society and beyond our shores.*"

Section Three: **Conclusions and Possible Issues for Ireland to Consider**

There is almost universal agreement across research and policy that key competencies matter for all students not as an alternative to knowledge but to extend and deepen understanding of it, commitment to it and to engage in its application. Key competencies are lifelong learning skills, identified by educationalists in schools, colleges and universities and by employers as essential for success in life and work. Their importance is ever increasing as societies change. The key competencies focus on that which Artificial Intelligence finds difficulty in mastering. Key competencies, where knowledge, skills and values and dispositions are intertwined reflect the essence of what it is to be human. In a world where Artificial Intelligence is becoming an increasingly dominant feature, it is crucial that education systems prepare all students well to contribute that which machines cannot yet do. The key competencies can help students to work with AI generated products in critically informed ways in a world where it will become increasingly important for students to be able to discern the difference between fact, 'fake news 'and fiction; reality and AI generated 'realities'. Around the world, countries understand the importance of key competencies in the education of future generations and, in different ways, are grappling with their enactment. For despite the concept of key competencies being part of international educational discourse for more than twenty years, it is clear from both research and practice that having them part of day-to-day learning and teaching with students' progress supported and assessed is still work in progress.

Ireland recognises the increasing importance of key competencies for future students. During the review of Senior Cycle (2016-2021), participants expressed a clear desire for students to further develop their knowledge, skills, values and dispositions in an integrated way throughout Senior Cycle. A number of priority competency-related aspects of learning was also identified. As part of the redevelopment of Senior Cycle, further research including the work of Professor Carol McGuiness helped to inform the development of a set of key competencies which aim to create future citizens who are enriched, engaged and competent learners. this work emanated from the Advisory Report and work was undertaken to review and identify the skills, values and dispositions that students will build upon from earlier stages of education and those they should develop during Senior Cycle through engagement with knowledge across various subjects, programmes and modules and is outlined in the advisory report (https://ncca.ie/media/5399/scr-advisory-report_en.pdf pp25-29)

Key competencies are thus integral to the design of the revised Senior Cycle but it is clear that moving from policy to practice is not an easy task. Recognising the importance of key competencies in curriculum, pedagogy and assessment is crucial. As Ireland embarks on this journey what evidence from research and practice internationally might support the process.

3.1 Introducing Key Competencies into Educational Policy and Practice must be Planned Carefully

Having key competencies built into the design of the curriculum is a crucial first step but evidence from research and from practice in other countries suggests that this is only a first step. The major challenge lies in making them part of practice in every school and classroom. For that to happen, the process of change will require very careful planning**.**

The education systems in British Columbia, New Zealand, Scotland and Singapore all share curriculum aspirations that are similar to those of Ireland, but each context is different. However, all

four contexts recognise that embedding key competencies in practice will require more than good policy. Careful attention has to be paid to the process of change and to how ideas of key competencies will become sustainable practice. It may be useful to employ a change model to inform the change process. This model can be used to inform the implementation process in ways that promote better alignment between policy intention and practice. It can also provide a framework to monitor the development of change over time, using evidence from policy makers and practitioners to ensure that as practices develop, they remain consistent with the vision.

3.1.1 The Integrity Model of Change

The Integrity Model of Change is empirically derived from work undertaken in Scotland to build sustainable change in assessment (Hayward & Spencer, 2010). It identifies the features necessary to plan for sustainable change and has been used in a variety of contexts, e.g., in the UK (Scotland, Wales and England) and beyond, e.g.,with UNESCO and OECD.

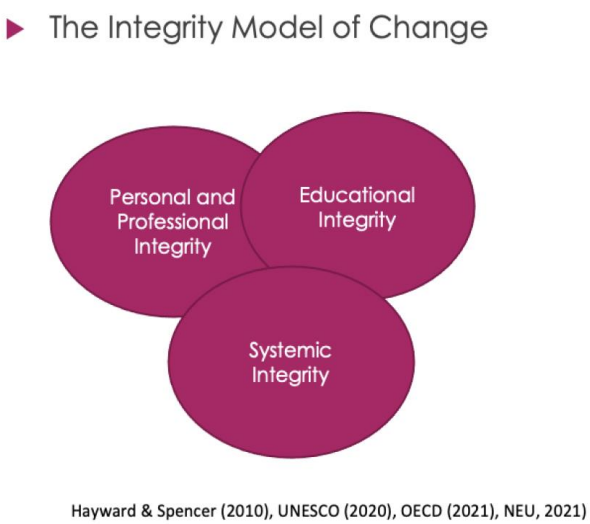

Figure 1: The Integrity Model of Change

The model comprises three overlapping and interacting areas:

- Educational Integrity: the need to ensure that what is proposed has a clear vision; a desirable educational purpose that will lead to better educational opportunities and better life chances for every student
- Personal and Professional Integrity: the need to build capacity to take forward reform. Everyone who has a role to play in making an innovation successful should be involved in its design and development, recognising and valuing the crucial role that each will play in contributing to the agreed vision
- Systemic Integrity: the need to ensure that the various parts of the system are aligned to support the reform. Learners, parents/carers, Government, national agencies, professional

associations, local communities, teachers, education providers, colleges, employers and universities, all have distinctive roles to play to support the change process if the reform is to be successful.

3.1.2 Planning for the Development of Key Competencies must take Account of Context

Which key competencies matter and how they are defined vary across research and in the policies and practices of the different nations. Although there are overlapping themes in the competencies, the context for each nation is important and reflected in different emphases. Similarly, each nation has taken a different approach to how key competencies might become practice. Context matters. Ideas cannot simply be taken from successful practice in one country and adopted in another. Understanding the context of the individual country is crucial and those best placed to take decisions about how ideas might become practice in Ireland are those who live and work in the country and have a deep understanding of the culture.

That said, it is possible to learn with other countries, to consider what they have learned from the approaches they have taken as they strive to embed key competencies in their curricula. Using the integrity model of change as the organiser, we consider what evidence from research and international practices might be useful to Ireland in planning to embed key competencies in the Senior Cycle.

3.2 Educational Integrity: what might be learned from research and from existing practice in other countries.

3.2.1 The case for Key Competencies has to be made.

Evidence from research and from practice in other countries emphasises the need to have a clear rationale for key competencies and to be explicit about why they are crucial to the curriculum for future students in Ireland. Key competencies are new to many people. Thus, it is important to explain, e.g., why they really matter, the changing future and the emergence of AI, how key competencies relate to knowledge and how progression might best be assessed. There is a common misconception that key competencies are in competition with knowledge (see Pellegrino below). That misconception should be addressed in policy and practice documentation, through professional learning and in other educational practices, i.e., school self-evaluation and inspection processes.

What competencies matter, what they are and how they are represented in the curriculum should remain at the forefront of every curriculum development conversation; and conversations have to continue over time. Key competencies are a new element of school experiences and the argument for them has to be made to students, student teachers, teachers and those communities who work with schools in professional learning, inspection or in policy development. Key competencies are not only new for schools, but they are also new for parents/carers and the wider community in Ireland. This narrative should, therefore, serve as the basis of all communication in and beyond schools.

3.2.2 Assessment cannot be considered separately from curriculum, learning and teaching.

If Key Competencies are to become part of learning and teaching in the curriculum of any country, they have to feature in all aspects of the learning experience, curriculum, pedagogy and assessment. The curriculum is designed to develop expertise in students. Expertise requires specialist and organised knowledge that is made meaningful by being structured into schema not presented as unconnected lists of facts. For knowledge to become expertise it has to be understood and applied. Competencies, therefore, should be embedded in different areas of learning with opportunities for cross curricular links to be encouraged. The rationale for and the link between knowledge, key competencies, values and dispositions should be explicit to students and teachers.

The assessment of key competencies cannot be considered separately from curriculum or from learning and teaching, nor can it be ignored. In cultures such as British Columbia where there is virtually no high stakes assessment in the final years of school, the assessment of key competencies can be integrated into existing practice and evidence gathered through day-to-day classroom activities. However, even in that context, there was recognition that although there had been investment in the 'why' of key competencies, perhaps insufficient time had been spent in the 'how'. In Scotland, where key competencies (capacities) were seen as drivers of the curriculum, in the Senior Phase where qualifications dominated, they were not sufficiently visible. As they were not perceived to be part of the qualification system (although they are listed on Qualification Certificates), it was argued that they had become invisible.

3.2.3 Assessment of Key Competencies should be 'Fit for Purpose'.

The review of research on assessment of key competencies suggests that there must be a balanced and coherent approach to assessing student competencies. Separate assessments for individual competencies are unhelpful.

The need to ensure that approaches to assessment are fit for purpose is a consistent theme. There are a number of features that characterise what 'fit for purpose' would mean in practice, for example, the focus would be on what matters in learning, which would include progress in competencies and academic performance to encourage a more rounded view of student progress.

There is little evidence beyond the developmental work being undertaken in large-scale assessment programmes such as PISA, of tests that would be of use to classroom teachers in gathering evidence of progress in relation to key competencies. Instead, assessment should focus on approaches that put learners at the centre. Student-centred learning approaches such as project learning and extended performance tasks are perceived to have promise. Real world problems are rarely limited to one curricular area, and tasks that encourage students to make connections across different areas of the curriculum will provide opportunities for them to build the competencies they need to thrive in whatever they choose to do next, in further education, university or in employment. The features of good assessment tasks identified in the literature are authentic, where there is room for failure, where feedback is built into the process and where the tasks have 'low floors' and 'high ceilings', i.e., where tasks are accessible to students at all levels but do not limit the potential of any student to demonstrate their potential.

3.2.4 Assessment in Key Competencies will require New Assessment Thinking

Practice in the assessment of key competencies is still relatively new and this is reflected in both research and policy. Currently, a great deal of attention in research and policy is concerned with the development of new approaches to assessment, sometimes referred to as 'next generation assessments'. These assessments are designed to allow students to demonstrate what they know, understand and can do in authentic, close to life contexts.

Pellegrino (2023) argues that this involves defining what assessment being aligned with learning and teaching actually means. He describes how knowledge and competencies should be integrated. First, there should be clarity about the foundational knowledge necessary to enable students to apply 21st century competencies. Second, developmental progressions should integrate knowledge and skills systematically with 21st century skills strategically positioned throughout the curriculum. Assessment tasks[1] should offer students opportunities to demonstrate the best of what they know, understand and are able to do. The assessment process then gathers evidence that can be used to draw reasonable inferences about students' progress in relation to what is designated to be important.

How, then, does the evidence form research relate to developing policy and practice in Ireland?

3.3 Assessment of Key Competencies in Ireland

Ireland has adopted an integrated approach to key competencies in Senior Cycle combining knowledge, skills, values and dispositions (NCCA, 2024). The purpose of placing greater emphasis on key competencies, as identified in Figure 1 below, (ibid, p 1) is to help students to become more engaged, enriched and competent learners better able to thrive in the mid to late 21st century in Ireland

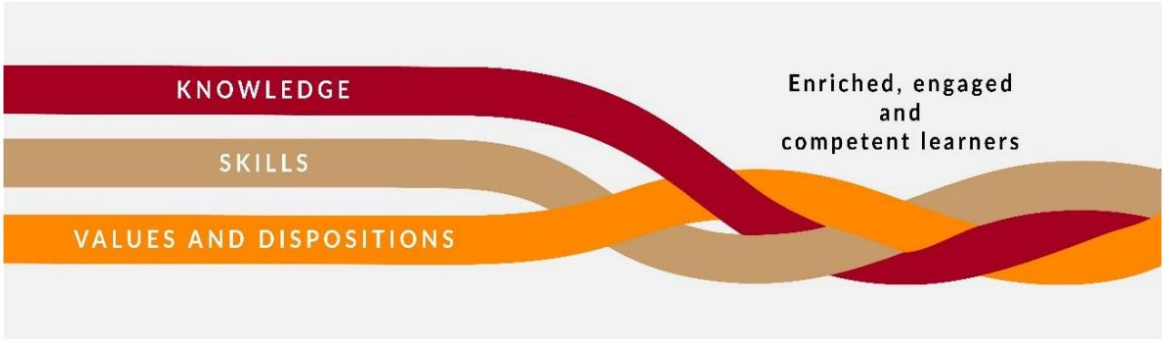

Figure 2: The components of competencies and their desired impact

[1] The use of 'Assessment tasks' in this context refers to tasks designed to enable students to apply and demonstrate their learning across knowledge, skills, values and dispositions (as appropriate).

Seven key competencies for the senior phase are identified (NCCA, 2024, P2 Figure 2); thinking and problem solving, being creative, communicating, working with others, participating in society, cultivating well-being and managing learning and self

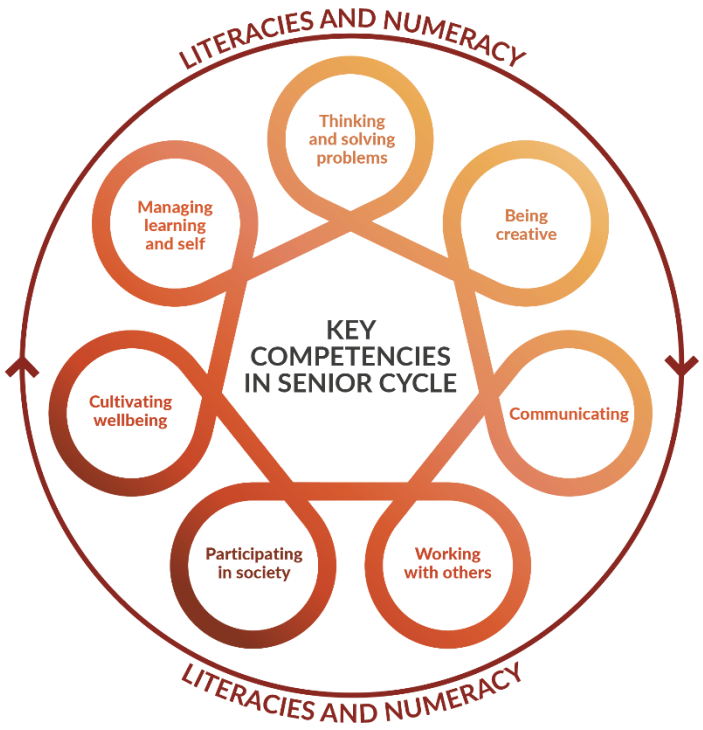

Figure 3: The seven key competencies and their inter-relationship with literacies and numeracies

The language of key competencies reflects a particular position on student learning. For example, in 'Working with Others', one of the Learning Outcomes identifies that students should be able to work co-operatively in pairs, groups and teams. The verbs used in the attributes associated with the competency portray learners as active, 'giving', 'contributing', 'evaluating'; and agentic, 'deciding things' and 'giving feedback'. The relationship between key competencies, literacies and numeracy is described as reciprocal, where the 'development of literacies and numeracy supports the development of competencies and vice-versa.' (NCCA, p 2).

Students will develop key competencies within subjects and across the curriculum throughout the Senior Cycle. A clear rationale has been established indicating how important key competencies are for Ireland's students. Key competencies will support students to grow '*intellectually, personally, socially, morally, and physically*.' (NCCA, 2024, p1). By engaging with key competencies, students have opportunities to *'draw upon, integrate and apply their knowledge, skills, values and dispositions to various tasks, contexts, situations and events'* (ibid, p1). Each key competency is named and described, with high level learning outcomes and related attributes. The attributes provide descriptions that can be used to construct learning tasks and as the basis for discerning progress in learning.

3.4 For the next phase of the development of Key Competencies to go well in Ireland….

There are a number of key messages emerging from this study that may support the successful introduction and development of key competencies in Ireland. Using the Integrity Model of Change, first we consider how to **promote educational integrity**.

There are four recurring themes from research, policy and practice Internationally to be considered: the case for key competencies has to be made; assessment cannot be considered separately from curriculum, learning and teaching; assessment of key competencies should be 'fit for purpose'; and assessment related to key competencies will require new assessment thinking.

3.4.1 The Case for Key Competencies has to be made in Ireland.

The policy documentation (NCCA, 2024) offers a sound rationale for the introduction of key competencies into the curriculum for Senior Cycle. This is a good start. However, the evidence from research, policy and practice in other nations suggests that the scale of the task in moving from policy ideas to practice is one that is commonly underestimated. Key competencies, variously described, have been part of wider educational discourse for more than 20 years but ideas in most jurisdictions are only now permeating into the language and the practices of schools.

The case for key competencies in Ireland will have to be made and made again not only in schools but in communities. The concept of key competencies is likely to be new for many parents who will not have experienced them during their own educational experiences. Ensuring that parents/carers are included in discussions about the new curriculum and the importance of key competencies will be crucial.

The argument for key competencies is fundamentally an educational one. In a fast-changing world the key competency approach is more likely to support learners into the less certain future that they must face. However, in considering how best to make the case for key competencies, it may be helpful to identify factors that are distinctive in the Senior Cycle.

Bearing in mind the focus in Senior Cycle on qualifications and life beyond school, it may be helpful to make links between the importance of key competencies in school and the importance of them for future success in third tier education and employment. For example, Universities in Ireland include 'Graduate Attributes' in their programmes. These have much in common with the key competencies described in Senior Cycle. For example, the Crannóg Project, makes reference to the use of Graduate Attributes in several Universities in Ireland, e.g., Dublin City University, Maynooth University, Trinity College, Dublin, and the University of Galway. Eight Graduate Attributes are identified: communications skills, teamwork, leadership, social responsibility, critical thinking, problem solving, analytical skills and professional ethics. https://www.teachingandlearning.ie/wp-content/uploads/Focus-on-Graduate-Attribute-Statements.pdf

The importance of skills for the future is also evident throughout economic policy documents in Ireland. For example, IBec, Ireland's Employers Federation, argues for the development of key competencies in a paper entitled 'Future Ready: improving graduate employability skills'. IBec focus on ideas of employability and their concern to help every individual develop as a 'capable person'. A capable person, they argue is one who is confident to:

• take appropriate action effectively;

• explain what they are hoping to achieve;

• engage successfully in life and work with others;

• continue their learning through their experiences in a changing world.

Similarly, in a briefing paper to NCCA (SOLAS,2024), SOLAS notes that Further Education and Training provision considers both **key competencies of the learner as an individual** to engage, develop, learn, including upskilling and re-skilling **occupational key competencies** that are industry or role specific or meet current or emerging regulatory requirements.

Ireland's National Skills strategy (to 2025) also includes as part of its vision a statement that future economic success will depend on *'The quality of our workforce – a nation of people armed with relevant knowledge, entrepreneurial agility and analytical skills*; (gov.ie Ireland's National Skills Strategy (www.gov.ie). Similarly, the OECD Review on the skills strategy in Ireland emphasizes the importance of skills for lifelong learning (**gov.ie - OECD Skills Strategy Ireland: Assessment and Recommendations (www.gov.ie)**.

3.4.2 Assessment cannot be considered separately from the curriculum, learning and teaching or from teachers' assessment literacy in Ireland.

The policy approach to key competencies being adopted in Ireland is an integrated one. The clarity of the vision where key knowledge, skills, values and dispositions are seen as components of key competencies like strands in a rope, is a powerful metaphor which challenges any possible misconception that knowledge and skills are in competition. The inextricably linked relationship of 'knowledge, skills, values and dispositions' are linked to purpose, the development of 'enriched, engaged and competent learners'.

Consistent with research evidence, the pedagogy forefronts the learner. Students are active. They 'engage' with key competencies and are agentic as evidenced by verbs where, e.g., learners 'draw on, integrate and apply'.

Assessment in the Senior Cycle has features that distinguish it from other parts of the education system. Senior Cycle assessment is dominated by qualifications, principally achieved through examinations that serve a variety of purposes. The courses taken provide evidence of achievement. However, qualifications are also the currency used in Ireland to allocate opportunities. They are used by employers, universities and colleges to decide who to appoint to which job or to select for which course. Qualifications are also used as a proxy for school quality. Although not created by the Irish Government, league tables of school qualification performance are published in some newspapers. In general, the higher a school's position in league tables, the better the school is assumed to be on the basis of sending the most students to college Yet these tables do not give any insight into the competencies developed by the students or their progression to other pathways.

The range of purposes qualifications serve for students and schools lead them to be 'high stakes.' This context means that there are particular implications for how seriously key competencies will be taken. In the Senior Cycle, if an aspect of education is not assessed, and if that assessment is not part of the qualification system in some form, it is likely that its status will be reduced. Or they may become invisible and as was evident in Scotland and Singapore, countries with a similar tradition to

Ireland of examinations as a major part of qualifications. Conversely, assessment in such circumstances can also act as a driver for change (Looney, 2006). If key competencies are assessed and that assessment is valued within the range of purposes assessment serves, key competencies will be visible to students, their teachers and, with careful planning, to wider society.

Assessment, then, has a crucial role to play in the development of key competencies in the Senior Cycle in Ireland as it will signal to the education system that competencies matter; for what is assessed will inevitably influence what is taught.

3.4.3 Assessment of Key Competencies in Ireland should be 'fit for Purpose'.

Coherence is key to the approach taken to key competencies. The approach to key competencies presented in the NCCA policy paper (2024) clearly links curriculum, pedagogy and assessment. This integration is continued into the learning outcomes. The attributes, associated with each key competency, provide a useful framework to identify progress towards learning outcomes.

Research evidence argues against the use of separate assessments for individual competencies and there is little confidence that tests will serve the purposes for key competencies identified in the Irish curriculum. How then might student progress in key competencies be assessed? Progress can be gathered in a range of ways that would be consistent with the vision for key competencies in the Senior Cycle curriculum. For example, progress can be assessed formatively, through observation and discussion, teachers and students, as part of learning and teaching in classrooms.

The language of the attributes emphasises learner voice. The active, agentic nature of students as learners would be supported by student -centred assessment approaches such as self and peer assessment. These would provide students with opportunities to reflect on and to discuss progress in relation to the attributes, deepening their understandings of key competencies and of their own role as agentic learners in reflecting on their own development. Developing these skills in school would help to support students into the next stage of their lives in education or employment.

Different countries approach the assessment of key competencies in different ways. In New Zealand, teachers often ask students to 'self-assess' their demonstration of the key competencies. In the secondary phase in New Zealand, internal school-based assessment is perceived to be the most effective way to assess competencies. Internal approaches to assessment recognise that key competencies are best assessed in context. In British Columbia, teachers personalise approaches to the assessment of competencies building on the strengths of individual learners, e.g., one learner might provide evidence in a written text, another in a presentation. Scotland has taken a different approach, where progress in the capacities is not linked to achievement thresholds but to individual progress elicited through questions such as "did you progress this year?" The intention is to develop students who are capable of articulating their own skills, values and dispositions. In Singapore, the approach is also distinctive. The assessment focus in on the evaluation of programmes. The teacher's role is to facilitate student agency to enable the student to continue to develop the competencies beyond school.

Common across all nations' approaches is the desire to have the student at the heart of the process in the assessment of key competencies.

3.4.4 Assessment in Key Competencies will require new assessment thinking in Ireland

The research evidence suggests assessing key competencies will require new approaches to assessment, approaches that are more authentic, i.e., closer to life. In addition to the importance of student-centred approaches described previously, assessment tasks should be developed. These tasks should offer students opportunities to demonstrate what they know, understand and are able to do. The assessment process gathers evidence from which reasonable inferences about students' progression can be drawn in relation to what is designated to be important. There may be merit in developing initial examples of tasks nationally, where national organisations work in partnership with schools and teachers across Ireland to develop task frameworks that could be adapted into local circumstances by individual schools.

Key competencies bring together knowledge, skills, values and dispositions and the associated learning outcomes reflect what matters in the curriculum in Ireland. Interestingly, no nation in this study believed it appropriate to assess values and dispositions.

In British Columbia, key competencies are part of literacy and numeracy assessments. These are graduation requirements. In addition, the reporting policy in British Columbia includes student self-reflection on the competencies. New Zealand is currently looking at different approaches to assessment to recognise the shift in curriculum from curriculum recall to curriculum application. In Scotland, qualifications dominate the senior phase. If key competencies are to become an integrated part of the final years of secondary school, they will have to be recognised as part of qualifications. There are plans in Scotland to move from subject qualifications only to a broader leaving certificate that would include, Project Learning, an interdisciplinary project where key competencies would be demonstrated and a Personal Pathway where learners could reflect on their progress in and across key competencies. Singapore has developed a portfolio approach where students self-reflect on their development in competencies. They discuss this with their teachers and use the evidence to build their portfolio. Information on key competencies is also built into reporting to parents. There is no summative assessment of the key competencies, but school graduation certificates include reference to personal qualities that may include key competencies.

In Ireland, given the 'high stakes' context of the Senior Cycle, it may be helpful to consider how the importance of key competencies might be recognised in the assessment system. The Additional Assessment Component may offer an opportunity to create tasks where the integrated nature of knowledge, skills and values and dispositions evidence in the learning outcomes could be reflected in the student experiences and assessment; or it may be useful to reflect on the current admission process to college and university, to consider how progress in key competencies might be reflected.

It may also be helpful for Ireland to continue the discussions with countries involved in the development of this report, and perhaps others, to learn with one another as nations identify and tackle shared challenges.

3.5 Personal and Professional Integrity in Ireland

Building capacity in the development and assessment of key competencies is one of the most significant challenges as identified in the research and by the four nations. A consistent theme is that the development of a key competency approach takes time. Teachers need time to become familiar with key competencies and opportunities to consider implications for practice, i.e., what working in this way would mean for them in their classrooms.

Findings from the four nations involved in this study suggest that considerable attention should be paid to building capacity within and beyond the profession to support the successful introduction of key competencies. In designing the approach to capacity building, one size is unlikely to fit all and, as with learners, teachers and wider educationalists will have different professional learning needs.

Offering a range of options from which teachers and others can select approaches that will best suit their individual needs is an approach that will help to build agency and ownership amongst professionals. This more personalised approach to professional learning also models the kind of approach teachers are invited to use when engaging with learners. The following sections exemplify approaches to professional learning that evidence suggests are most likely to support the effective introduction of the key competencies.

3.5.1 Planning for Professional Learning for Key Competencies in Ireland

It is important to have a clear, shared vision of key competencies, developed with wide range of stakeholders, including learners' voices. Beyond that, the evidence suggests that professional learning opportunities should recognise how important the vision is and include time for people to reflect not only on the vision but on its rationale. The shared vision should include recognition that key competencies matter for every student and identify opportunities for teachers and school leaders to consider how the system can be inclusive and equitable in their own contexts.

Key competencies are new, and it is important to agree terminology and to use agreed terms consistently. To promote coherence, statements of progression in key competencies should sit within a framework for assessment from Early Years, to Primary, to Junior Cycle and Senior Cycle. There may also be opportunities to consider coherence beyond school into Further Education and Training and employment.

The most effective approaches to professional learning recognise that developing expertise is a social process for learners, teachers, national agencies and policy makers. Approaches that encourage dialogue and build networks within and beyond education, that engage teachers, e.g., in design teams, all encourage agency and ownership of change. These approaches are more likely to deepen understanding and facilitate practices that are consistent with the aspirations of the key competencies approach.

Crucially, teachers and school leaders will require opportunities to share ideas and to develop examples of what key competencies might mean in practice. Schools and teachers need clarity about what it is that they seek to assess. Professional learning should include opportunities to explore and to share what ideas in policy documentation might look like in different schools and different classrooms. Encouraging reflective practices as part of professional learning enables teachers both to apply their professional knowledge to new circumstances and encourages them to develop similar practices with learners.

Through well-supported collaborative professional learning opportunities, teachers should have opportunities to consider why having a more rounded picture of student progress matters. They should have time to make meaning, to explore ideas and to think through implications for practice- why does this matter for my students? What will this look like in practice with my students? How can I work with my students to support their agency? How do I know that my students are making progress in key competencies? The 50-50 rule, used in Scotland, may be helpful. Recognising that in previous reforms in Scotland insufficient time had been spent on how ideas might be put into practice, the 50- 50 rule was devised. Those involved in designing professional learning allocate 50% of time available to teachers to discuss the why and what of reform and 50% to discuss how to put ideas into practice.

The assessment of competencies is new, and teachers will need opportunities to work through how to assess them. Examples of the kinds of approach being taken in other countries as identified in this paper may help stimulate ideas. Given time and opportunity, teachers working collaboratively will develop approaches that will work for them in their circumstances. Networks of practitioners working purposefully and collaboratively capitalising on opportunities for online collaboration will tackle assessment challenges in practical ways. As examples develop, these might be subject to peer feedback and the outcomes made available for other teachers thus building capacity through the development process.

The assessment of key competencies is not amenable to a series of tips and tricks. Educational innovation is littered with examples where good educational ideas were all to quickly reduced to a series of routine practices where the essence of the innovation was lost.

An assessment related example of this can be found in the introduction and development of Assessment for Learning. When the innovation was first introduced, there was a clear link between the vision outlined in Black and Wiliams' literature review (1998), where research evidence demonstrated that pupils learn more effectively through formative assessment. With good intention, in an attempt to connect research ideas with classrooms, four areas of practice were then identified as areas to be developed: questioning, feedback, sharing criteria with learners, and peer and self-assessment. The intention was that these strategies would encourage a classroom culture where pupils would become more independent learners as advocated in the Learning How to Learn (LHTL) Project (James *et al, 2006).*

However, it soon became clear internationally, that gaps were appearing between the vision of Assessment for Learning (AfL) and classroom practice. Marshall & Drummond (2006) distinguish between the 'spirit' and the 'letter' of Assessment for Learning. Some teachers focused on the implementation of the four strategies, following the 'letter' of the innovation. Having disconnected practices from their purpose, the potential for AfL to encourage greater levels of independence and improve the quality of student learning was reduced. Improvements in student achievement were most commonly identified when teachers understood the 'spirit', the vision and rationale behind AfL and put strategies into practice in ways consistent with the vision.

Learning from that experience, the opportunities offered to teachers should encourage them to make explicit the connection between vision, key competencies and practices in classrooms

3.6 Systemic Integrity and the Assessment of Key Competencies in Ireland

Evidence from research and practice internationally emphasises the importance of whole system alignment in support of reform, in this context, the assessment of key competencies. This issue was raised in Carole McGuiness's paper (2023).

In essence, whole system alignment or systemic integrity, means that all those who have key roles to play in the development, enactment and assessment of key competencies should explore how the role that they play might best develop to support the policy aspirations. For example, the Department of Education, national agencies, leaders of professional learning (nationally and in schools), School Inspectors, Initial Teacher Education, teacher unions, teachers, parents, students, colleges, employers and universities all have significant influence on the extent to which an initiative in the Senior Cycle will be successful. Individually and collectively each individual and each organisation should consider what practical actions they might take to support the introduction and development of key competencies.

System alignment is also an important feature at the level of the school. An individual student's experience involves learning across a number of subjects and it is important that school leaders have an overview of the totality of that experience to ensure that across subjects students have opportunities to develop a range of competencies. It is equally important to ensure that their assessment across subjects is balanced and proportionate.

Successful enactment of key competencies will take time. However, that time should be focused. A long-term strategic plan should seek to integrate new approaches to the assessment of key competencies across systems.

Drawing together evidence from research and experiences from the four nations would suggest that the plan might include:

- a process to ensure alignment over time between strategy and vision, identifying how evidence will be gathered and used.
- agreement between national agencies and schools regarding the relationship between national and local. What is best undertaken nationally, core features, and what decisions are best taken locally, where schools and teachers will have autonomy over what matters in assessment
- strategies to support school leaders to lead schools as learning organisations
- plans for a range of approaches to networked professional learning
- a strategy for the development of new approaches to assessment, e.g., involving schools in pilot studies to develop authentic assessment tasks that are refined over time in school networks and/or identify opportunities that exist within the current system to situate and support the assessment of key competencies though additional assessment components, e.g., working with the State Examinations Commission
- a strategy to ensure that the different parts of the system are well aligned including opportunities for dialogue amongst key partners to ensure that the practices of key organisations are consistent with the vision for key competencies and support a deep and meaningful approach to the assessment of key competencies within an agreed framework

- a communication strategy that recognises the importance of engaging with the wider public to explain why key competencies matter and seeks ways to build public confidence in the assessment of competencies
- agreements to learn with other countries recognising that all ideas have to be contextualised in the culture and history of individual nations.

In Conclusion

Internationally, curriculum models are becoming increasingly complex reflecting the increasingly complex world in which we live. Key competencies that bring together knowledge, skills, values and dispositions represent the way in which Ireland has developed curriculum to ensure that its students are not left behind. However, although competencies have for some time been part of curricular thinking, assessment is only now beginning to catch up. As education systems increase in complexity, the need for clarity is increasingly important. However, as is clear from the research and from the nations interviewed as part of this study, clarity is a complex idea. It involves clarity of concept and of educational vision; why key competencies matter and how they are represented in the curriculum. Centrally, it recognises that changing curriculum and assessment in ways that are consistent with the intended purposes of key competencies will involve changes to the practices of all of those involved in the development of ideas and practices. For example, students will learn to face new kinds of assessment task. Networked groups of teachers will work together to make sense of why key competencies matter, how they might become part of classroom practice and how they might support students' progress. Those responsible for professional learning will design the kinds of active and agentic experience for teachers that would mirror the ways they might work with learners in schools and classrooms. School Inspectors will consider what kinds of practices they might expect to see in schools if key competencies are being developed in ways that are consistent with the vision. National policy makers work with partners to develop a long-term strategic plan that will address issues contained in this report including how to ensure that key competencies become part of public discourse amongst parents, third level education and employers.

Key competencies are crucial to the success of future students and future citizens. The international interest in the field is evidence that countries across the world recognise their importance. The students of Ireland cannot be left behind.

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