



Building a World-Class Learning System

Insights from some top-performing school systems



Geoff Masters



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Forward

What policies need to be in place for every child to experience an engaging and supportive learning environment that motivates not only high performance but a desire to keep learning?

What do students really need to know and be able to do to thrive in a changing world?

How can systems engage in ongoing improvement while also cultivating innovation?

These are just a few of the rich questions that motivated the National Center on Education and the Economy (NCEE) to fund the book you have in front of you.

For more than three decades, NCEE has been leading major advances in American education, helping to build a better, more equitable public education system that prepares all students to thrive in a changing global economy. We have done this by studying education systems both domestically and around the globe to surface best practices and emerging innovations that can inspire American policymakers and practitioners to action.

As part of our work, we invest in world-class research to understand the design of successful education systems, how they developed, and their strategies for improvement. We asked Geoff Masters, Chief Executive Officer of the Australian Council for Educational Research (ACER) and an international expert on educational assessment, to take a broad look at the learning systems in a small set of jurisdictions that have long performed well on the OECD's Programme for International Student Assessment (PISA). The question we posed to him was, what do these different education systems—British Columbia, Estonia, Finland, Hong Kong and South Korea—have in common now, and as they look into the future?

Masters' study of the five jurisdictions—Building World Class Learning Systems: Insights from Top-Performing School Systems—reveals key alignment across the goals that have shaped their learning systems to date. But these systems are not standing still. While the systems these jurisdictions have built over the last fifty years have yielded strong outcomes for students, they are concerned their current systems may not be adequate going forward. Masters reports an increasing sense of urgency to transform to adequately prepare students for future work and life and to ensure equity of opportunity. System leaders across the globe—including those in high-performing jurisdictions—are grappling with how best to equip the next generation of students for a world facing unprecedented environmental, political and economic challenges, and one that is being transformed in real time by globalization and advancing technologies.

The book provides a framework for looking at learning systems comprehensively, with chapters focused on system aspirations; curriculum and assessment; student, teacher, and leader support; and the ecosystem that supports learning. It provides rich detail about the five systems in each area, pulling out key examples of how and why systems chose particular strategies and dilemmas they faced and still face. It describes how these systems are designing their school curriculum to be more inclusive, more focused on deeper learning, more applied and to incorporate more choice for students to make learning more engaging, relevant and self-directed. Approaches to teaching and assessment follow these trends, with efforts in particular to see assessment as supporting teaching and learning and documenting progress as well as attainment. Masters includes questions at the end of each chapter to help draw insights from the experiences of these systems to inform work in our own systems, as that is the goal of the study and of NCEE's work across the US and beyond.

Masters' analysis leaves us with tantalizing questions looking ahead:

What new models of learning systems will emerge in the coming years?

Will the reforms identified here lead to higher outcomes for a broader range of students?

Will the systems that have led the way so far be those that continue to lead in the future?

Will our metrics of success change and, if so, how will that impact the design of our learning systems?

We look forward to continuing to interrogate these issues and facilitating the dialogues around these questions.



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1

Introduction



School systems throughout the world confront similar questions: How are today's children best prepared for their future lives and careers in a world that is changing rapidly and becoming increasingly unpredictable? What kinds of personal attributes, values, understandings, and competencies will best equip them to live happy and fulfilling lives, thrive, and make positive contributions in a world of ongoing global challenges? How can all children be given equal educational opportunities in contexts of significant, and often increasing, social disparities? What should be the nature and role of schools by the mid-21st century? Will they be radically different from the institutions we know today? Will ongoing advances in digital technologies bring fundamental changes in how, when, and where children learn? And if so, what will be the implications for the future roles of teachers?

These and many similar questions are being addressed by governments and school systems across the world. In many countries, such questions are leading to different ways of thinking about schooling, its essential purposes, and the nature of learning itself. In response, jurisdictions are reforming key components of their learning systems, including the school curriculum, assessment processes, the preparation and support of teachers and school leaders, and interventions and supports for students who require them.

This book explores in some detail how five school systems have been rethinking and reforming aspects of their schooling arrangements. The five school systems—British Columbia, Estonia, Finland, Hong Kong and South Korea—have been selected for study because, over recent decades, they have all performed at unusually high levels in international surveys of student achievement, including the OECD's Programme for International Student Assessment (PISA). The assumption is that their high performances are due in part to the learning systems they have built and the education reforms they have introduced at various times in the past.

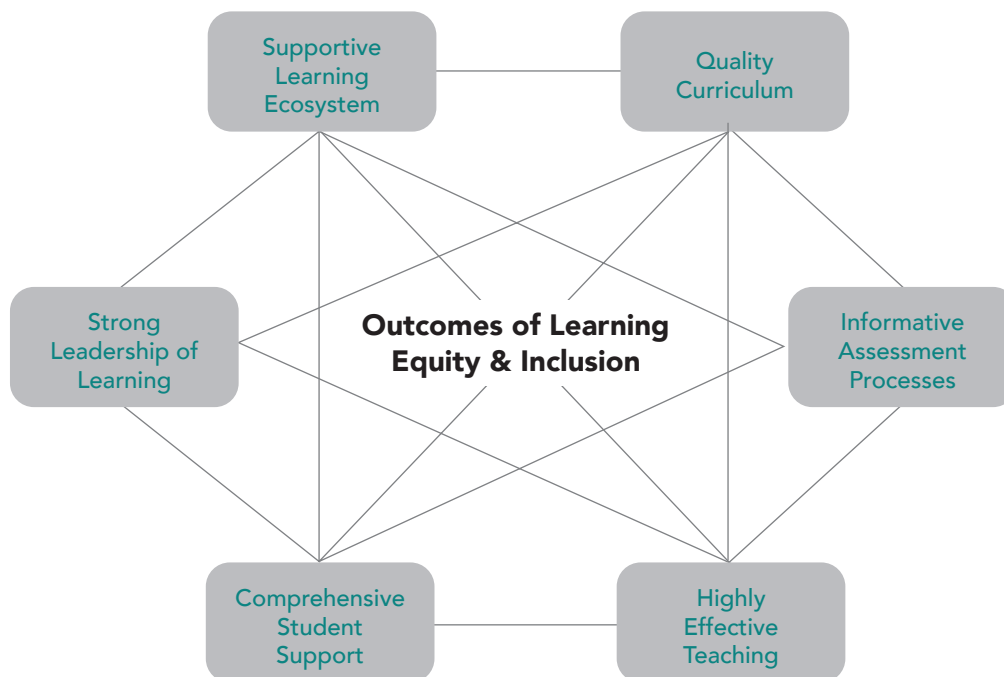
The study of these school systems reveals that they have all been on trajectories of reform, in most cases for several decades, and their reform trajectories are continuing. Each of these school systems is currently in the process of rethinking and redesigning aspects of its learning system. An objective of this study has been to understand the schooling arrangements these jurisdictions have established, the thinking and objectives that underpinned them, the forces that influenced their implementation and evolution, and the goals and challenges of present reform efforts.

The study was undertaken in the belief that these details would be of interest to other school systems and would provide insights into what it takes to build a world-class learning system. At a minimum, the study provides information about how and why these five jurisdictions have been working to change their schooling arrangements over time, commonalities and differences in their objectives and approaches, and how they are thinking about redesigning their learning systems for the future.

Conceptualizing a Learning System

An outcome of this study has been a framework for thinking about and studying any jurisdiction’s learning system. The framework emerged from the analysis of schooling arrangements in these five jurisdictions and is represented in Figure 1.1.

Figure 1.1 A Learning System



At the center of the framework are a jurisdiction’s core aspirations. There are two kinds: aspirations for the outcomes of student learning, and aspirations for an equitable and inclusive learning system. These jurisdictions’ aspirations for school education are outlined in Chapters 2 and 3.

Aspirations for the outcomes of learning identify what students are expected to learn and develop. In these jurisdictions, intended outcomes include, but are not limited to, disciplinary knowledge and understanding; skills in transferring and applying knowledge; competencies such as critical thinking, creative thinking, problem solving, collaborating with others, and using technologies; and personal attributes, such as resilience, self-management, ethical behaviour, and self-confidence. Some outcomes are aspirations for all students; others are determined by the choices students make.

Aspirations for equitable and inclusive learning conditions are pursued in these jurisdictions through the promotion of learning environments that are culturally responsive, student-centered/personalized, intrinsically motivating, collaborative, technology-enabled, untracked, and continuous/seamless.

Surrounding these central aspirations are six interrelated components of a jurisdiction’s learning system. Each component is designed to work with the other components to deliver the jurisdiction’s desired

outcomes of learning and to create learning conditions that are equitable and inclusive of all. This shared purpose, and their considerable interdependence, make the six components a ‘system’.

This framework has been useful in studying, understanding, and comparing these jurisdictions’ learning systems. It has been used in two ways. First, to focus analysis on a specific component and to explore that component across the five jurisdictions. For example, a focus on ‘comprehensive student support’ resulted in an analysis of how these five school systems provide support to particular groups of students and to individual learners who require it. This analysis highlighted the efforts Finnish schools make to monitor the progress of individual students and to intervene when they are beginning to slip behind in their learning. It also highlighted the efforts British Columbia makes to ensure that students from minority backgrounds, including Indigenous and immigrant students, are included and supported in their learning. Similarly, a focus on ‘a supportive learning ecosystem’ highlighted the important role of out-of-school learning in Estonia through activities such as hobby schools, nature clubs, and student competitions, and the significance of the complex network of community support for the work of schools in Hong Kong.

Second, the framework has been used to focus analysis on one jurisdiction at a time and to consider how well all components of its learning system work together to support each other and to deliver that jurisdiction’s central aspirations for its schools. For example, how well do the jurisdiction’s assessment processes reflect its curriculum priorities and the outcomes it identifies as core aspirations for its students? Do they promote these priorities and aspirations or potentially undermine them? How focused is the jurisdiction on recruiting, developing and supporting school leaders who will create the desired conditions for learning in schools and drive improved student outcomes through their leadership of teaching and learning—or are principals seen mainly as school administrators?

These six components are reviewed in Chapters 4 to 9. Each chapter addresses a particular component and investigates how these five jurisdictions have designed and developed that component over time, and how they are thinking about it for the future. How have they approached this component? How and why have they been reforming it? Are there principles that have guided their efforts? Have thinking and intentions been similar across the five jurisdictions? How and why have they been different? The intention is to provide insights into the thinking and practices of these high-performing jurisdictions in the belief that they are likely to be of interest and use to school systems everywhere.

Having reviewed what these jurisdictions say they are looking for from their schools (Chapters 2 and 3), and studied the learning systems they have put in place to achieve these aspirations (Chapters 4 to 9), the final chapter (Chapter 10) reflects on ways in which design features of current learning systems function as impediments to the full achievement of jurisdictions’ aspirations. The chapter considers implications for the future design of school curricula, ways of thinking about teaching and learning, and approaches to assessing and documenting student learning.

Studying a Learning System

The details of a jurisdiction’s learning system can be understood from an analysis of the jurisdiction’s documented policies and practices; written reviews and commentaries on the system; in-depth conversations with current and past decision-makers and stakeholders, including teachers, school principals, business leaders, and representatives of the tertiary education sector; and visits to educational institutions and organisations to observe the learning system at work. The purpose of these detailed conversations and analyses is to understand the learning system as it currently exists, the details of its evolution over time, and plans for its future reform and further development. Of particular interest is information about the reasons the learning system evolved as it did, including the political and social forces that shaped it, and the values and principles that guided its evolution.

In this study, the investigation of each learning system began with the collection and analysis of documents relating to the jurisdiction's history, demographics, political structure, economy, and relevant government policies and priorities. These documents included recent commentaries and news articles. Documents also were assembled on the education system, including its history and current education policy priorities, relevant statistics, and external reviews and observations made by other organisations. Finally, documents describing specific aspects of the learning system were collected and analyzed, including the school curriculum, assessment processes, arrangements for supporting teachers and school leaders to deliver the curriculum, and additional supports for students requiring them.

In-country researchers then prepared detailed descriptions of each learning system and its evolution. These researchers were chosen because of their high level of familiarity with the system. Usually, they had played key roles in the development of the learning system as employees of the ministry and/or were academics intimately involved in the development and review of the jurisdiction's schooling arrangements. The resulting detailed report on the jurisdiction's learning system was then prepared for separate publication as part of this study.

Interviews were undertaken with leading educators and others in the jurisdiction to develop a better understanding of factors that influenced its development. Interviewees included current and past heads of government departments and agencies, deans of education, other academics, business leaders, leaders of professional associations, and current school principals. An attempt was made to identify and interview people who could bring different, and sometimes opposing, perspectives on the evolution of the system. Interviews were also conducted with people outside the system, such as journalists and commercial providers of textbooks and digital solutions for schools.

Visits to schools to observe the learning system in practice were made where this was possible. The COVID-19 pandemic prevented the planned school visits in most jurisdictions in 2020. Where school visits were possible, classrooms were observed, and conversations were conducted with school principals, teachers, and students.

The evidence from these various sources was then brought together and analyzed through the lens of the framework described above, considering each component of the learning system in turn and exploring how these five jurisdictions have addressed that component over time.

The Five Jurisdictions

The five jurisdictions participating in this study were: the Canadian province of British Columbia; the Republic of Estonia; the Republic of Finland; the Hong Kong Special Administrative Region of the People's Republic of China; and the Republic of Korea. These jurisdictions were selected for inclusion because they all performed at unusually high levels in the OECD's PISA surveys of reading literacy, mathematical literacy, and scientific literacy in the period between 2000 and 2018.

Hong Kong was a consistently high performer in all three literacy domains, almost always performing among the top four jurisdictions in the world, even with the addition of other high-performing jurisdictions in later PISA cycles. However, there was a marked decline in the scientific literacy performance of Hong Kong students after 2012.

Finland was one of the top two performers in most literacy domains until 2009 but saw a decline in average performance after 2006. South Korea also performed at consistently high levels (often among the top four PISA scorers) until 2012 but performed at lower levels in 2015 and 2018. British Columbia was a relatively high performer (and among a handful of top performing jurisdictions in science) but saw a decline in 2018. And Estonia was a consistently high performer in science and an improving performer in reading from the time it joined PISA in 2006.

In recent decades, these five jurisdictions have had ambitious aspirations for their school systems, accompanied by a sense of urgency. In common with other nations and economies, they have looked to their schools to prepare a generation that will face unprecedented challenges, including existential threats resulting from human degradation of the natural environment; ideological conflicts that threaten to tear societies apart and deny peaceful coexistence; widening gaps between the wealthy and the poor, leading to growing marginalization, increasing frustration with governments and traditional institutions, levels of civil unrest, and growing extremism; and the impact of globalization and advancing technologies on the availability and nature of work, with a disproportionate impact on low-skilled workers and those already disadvantaged. They have also recognized that education, rather than being viewed as a potential contributor to the solution of global challenges and a path out of personal disadvantage, is increasingly viewed as part of the problem—a mechanism that works to the advantage of social elites by providing privileged access to opportunities, qualifications, careers, and wealth not available to others. In response, all five jurisdictions have been working to redesign their learning systems to promote the kinds of understandings, values, and personal attributes that the future is likely to require and to ensure that every student is fully included and has access to high-quality teaching and learning.

Although the measures on which these five jurisdictions were selected—reading, mathematical, and scientific literacy—remain essential outcomes of schooling, they are only part of the broader set of student learning and development that these school systems now value and prioritize. Because there are limited internationally comparable measures of this broader range of outcomes, it is not possible to know whether these jurisdictions also would be high performing on a different set of measures.

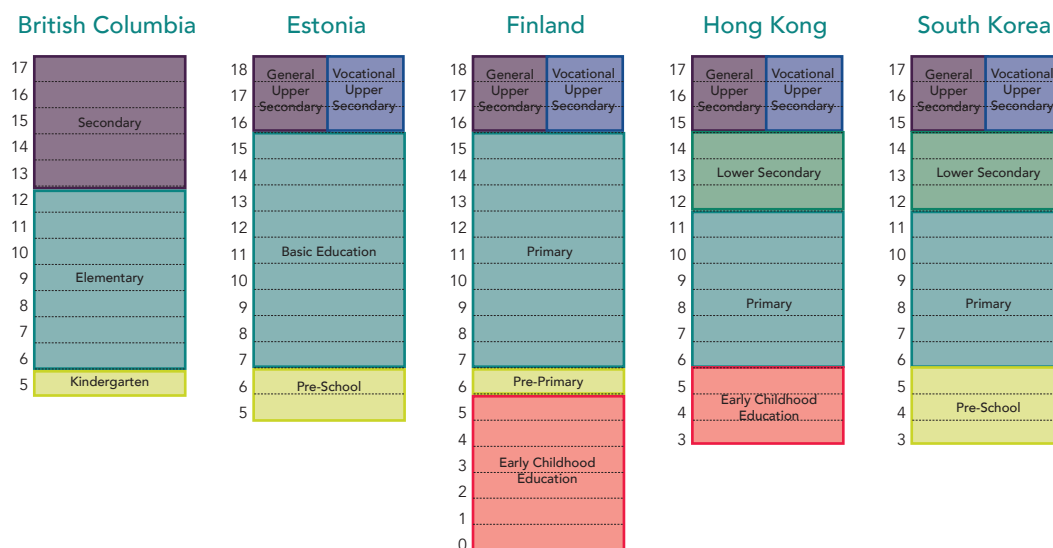
It is also difficult to draw inferences about the educational policies and practices that may have led to the relatively high performances of students in these jurisdictions. In general, students' performances are shaped not only by the quality of educational provision, but also by cultural, historical, and political influences. In addition, performances at any given time are often more reflective of past policies and practices than a jurisdiction's current policies and practices. The focus of this study has been on identifying and understanding how these five jurisdictions have developed their learning systems over time and, where possible, to identify common trends and objectives. An effort has been made to identify general approaches and principles that may explain their relative success, despite their unique cultures and histories.

At the same time, there are questions about why most of these jurisdictions have witnessed declines in performance over recent decades, and why these declines have not been uniform across the PISA domains.

There are interesting general observations that can be made concerning these five jurisdictions. One observation is that four of the five jurisdictions rebuilt their learning systems following a major event. For Estonia, this was the collapse of the Soviet empire; for Finland, the end of the second world war; for Hong Kong, the return to China; and for South Korea, the end of the Korean war.

These five jurisdictions also differ in important ways. One obvious difference is in the structure of their school systems (see Figure 1.2), which determines when students are taught by subject specialists rather than generalist classroom teachers, and whether, when, and how vocational learning is introduced.

Figure 1.2 Structures of the School Systems in These Five Jurisdictions



Another difference is in their populations (see Table 1.1). Four of the five jurisdictions have relatively small populations. There are more than 40 cities in the world with populations larger than the populations of these four jurisdictions. The relatively small size of some of these jurisdictions may have enabled them to implement policies and changes, and to develop jurisdiction-wide relationships, in ways that would have been more difficult in larger jurisdictions.

Table 1.1 Populations of Five Jurisdictions in 2021

Country/Region	Population Size
British Columbia	5.2 million
Estonia	1.3 million
Finland	5.5 million
Hong Kong	7.6 million
Korea	51.3 million

Note: Population figures for this table are from “List of Countries by Population”, by Statistics Times, 2021 (<https://statisticstimes.com/demographics/countries-by-population.php>). Copyright 2021 StatisticsTimes.com. In the public domain.

The five jurisdictions also vary significantly in area (see Table 1.2). This is likely to have had an influence on the delivery of school education, particularly in jurisdictions with a relatively large proportion of rural and remote schools.

Table 1.2 Areas of Five Jurisdictions (Thousands of km²)

Country/Region	Area
British Columbia	944.6
Estonia	45.2
Finland	338.4
Hong Kong	2.8
Korea	100.2

Note: Area figures for this table are from Wikipedia and www.worlddata.info

2

Outcomes of Learning



All five jurisdictions in this study are reconsidering the desired outcomes of schooling. Some began this process in earnest more than two decades ago. All are looking to their schools to assist in creating the kind of society they aspire to become. This invariably includes a society that is equitable and caring, with a strong, sustainable knowledge-based economy, making a valued international contribution to global peace, stability, and environmental sustainability. Some jurisdictions have developed descriptions of the kinds of citizens this future will require. This includes citizens who are knowledgeable, adaptable, skilled, innovative, productive, cultured, independent, principled, and respectful of others. All recognize the far-reaching implications of these aspirations for their school systems. They understand that the outcomes they now seek from schools will not be delivered through incremental adjustments to traditional curricula, pedagogies, and assessment processes, but require deeper transformations and reform.

What Kind of Society?

All countries and economies operate in an increasingly interconnected world and so face common challenges and opportunities. A challenge for governments everywhere is to respond to unprecedented rates of economic, political, social, and cultural change. A globalizing knowledge economy and rapid advances in technologies have changed the nature of work and ushered in new models for doing business. New kinds of occupations have emerged requiring new kinds of skills and knowledge that often require continual updating. At the same time, the world is experiencing shifts in balances of power, a decline in the influence of international institutions, and ongoing conflicts and threats of conflicts. And the entire planet faces challenges resulting from environmental degradation and climate change.

In the context of these global challenges and opportunities, most jurisdictions—including those in this study—have experienced significant local change. Many have seen the transformation of their economies. For example, Finland's economy has transformed over time from a largely rural and agricultural economy to a modern industrial economy and, over the past 20 years, to an increasingly service-based economy. Hong Kong's economy has transformed from one based largely on labour intensive manufacturing industries to one based on world-class financial, technological, and other service industries. Estonia, with its shortage of natural resources, has sought to build its human capital, promote innovation, and develop new technology-based industries.

Some jurisdictions have also faced demographic changes, such as increasing urbanization and growing rates of immigration. Declining birth rates and an ageing population have been features of some societies,

including Korea, which has also seen a decline in its gross domestic product (GDP) growth. And some have experienced growing social inequalities and polarization. In Hong Kong, there has been an increasing focus on ‘national security’ to build a sense of national identity and to ensure the development and stability of the territory.

In these contexts of global and local change, these five jurisdictions have been less focused on making incremental improvements to their existing curricula, teaching, and assessment processes, and more focused on considering how their learning systems must be reconstructed to deliver the outcomes now required by society and the economy. As a result, the focus has been less on modifying existing arrangements and more on redesigning for the future (Cheng, 2017).

Estonia is an example of a nation planning the society it wishes to become. Through its ‘Estonia 2035’ strategy, it has developed strategic goals that also provide high-level guidance to its education and training systems (Box 2.1). Estonia also systematically anticipates the needs of its future labor market. Since 2014, the Estonian Qualifications Authority has annually analyzed labor and skill requirements for the nation’s economic development over the coming decade. It conducts interviews within employment sectors to identify current and anticipated requirements for workers, skills, education, training, and qualifications. In responding to global and local changes, and in planning their future societies and workforces, all five jurisdictions have identified a need for citizens and workers who can adapt and thrive in a rapidly changing world; can innovate, create new solutions, and add value; have the entrepreneurial skills required to maintain national productivity, international competitiveness, and a strong economy; and have the capacity for ongoing, lifelong learning and upskilling.

Box 2.1 Broad Societal Goals: Estonia (*Estonia 2035 Strategy*)

The ‘Estonia 2035’ strategy sets out five long-term strategic goals for the nation. These national goals were the product of discussions that took place across the country over a 2-year period and involved almost 17,000 Estonians.

Strategic Goals:

- ✓ Estonia’s people are smart, active, and care about their health.
- ✓ Estonia’s society is caring, cooperative, and open.
- ✓ Estonia’s economy is strong, innovative, and responsible.
- ✓ Estonia offers a safe and high-quality living environment that takes into account the needs of all its inhabitants.
- ✓ Estonia is innovative, reliable, and people-centered.

(Government of the Republic of Estonia, n.d., paras. 9-13)

In Summary

The outcomes these jurisdictions seek from their schools reflect their values and aspirations for the kinds of societies they wish to be. Some make these aspirations explicit. Typically, they wish to be societies that are equitable, inclusive, and caring for all; democratic; agile and able to respond to ongoing global change; innovative, entrepreneurial, and built on modern, knowledge- and service-based economies; and responsible contributors to global peace, stability, and environmental sustainability. Schools are seen to have a crucial role in creating societies of this kind.

What Kinds of People?

Some of these jurisdictions have described in more detail the kinds of citizens they wish to see their school systems develop. In British Columbia, the 1988 royal commission observed that, after a period of considerable social change, there was a lack of clarity about the school's role in society. The commission reported that parents, community leaders, and school leaders were calling for greater clarity about the school's educational purpose and responsibility. The government responded in 1989 with a Mandate for the School System that included a description of 'the educated citizen' (British Columbia Ministry of Education, 1989; see Box 2.2). This statement has continued to be an influential point of reference for school education reforms in British Columbia.

Korea, too, has spelled out in some detail the kinds of citizens it wishes its school system to develop. These are reflected in its 2015 revision of the national curriculum. Its aspirations include the development of citizens who are independent, creative, cultured, and democratic (Ministry of Education, 2015; see Box 2.3). A high priority is given to a strong sense of self identity and the ability to manage one's own learning, life, and career; to solve problems through reasoning; to create new value by thinking creatively and drawing on a broad knowledge base; to value and enjoy life and understand and respect others; and to participate actively in society.

Box 2.2 What Kinds of People? British Columbia ("The Educated Citizen")

A quality education system assists in the development of human potential and improves the well being of each individual person in British Columbia society.

Continued progress toward our social and economic goals as a province depends upon well-educated people who have the ability to think clearly and critically, and to adapt to change. Progress toward these goals also depends on educated citizens who accept the tolerant and multi-faceted nature of Canadian society and who are motivated to participate actively in our democratic institutions.

Government is responsible for ensuring that all of our youth have the opportunity to obtain high quality schooling that will assist in the development of an educated society. To this end, schools in the province assist in the development of citizens who are:

- ✓ thoughtful, able to learn and to think critically, and who can communicate information from a broad knowledge base;
- ✓ creative, flexible, self-motivated and who have a positive self image;
- ✓ capable of making independent decisions;
- ✓ skilled and who can contribute to society generally, including the world of work;
- ✓ productive, who gain satisfaction through achievement and who strive for physical well being;
- ✓ cooperative, principled, and respectful of others regardless of differences; and
- ✓ aware of the rights and prepared to exercise the responsibilities of an individual within the family, the community, Canada, and the world.

(British Columbia Ministry of Education, 1989, D-88)

Box 2.3 What Kinds of People? Korea (“The Educated Citizen”)

The human image pursued by the [2015 Revised Curriculum] is comprised of the following:

- ✓ an independent person who establishes their self-identity and pioneers their career and life based on the growth of the whole nation;
- ✓ a creative person who creates new things with a variety of ideas and challenges based on their basic skills;
- ✓ a cultured person who enjoys and develops human culture based on cultural literacy and understanding of pluralistic values; and
- ✓ a democratic person who communicates with the world with a sense of community, and who practices consideration and sharing.

In order to realize the human image pursued by this curriculum, the core competencies that must be cultivated through the entire school education course, including subject education, are as follows:

- ✓ the self-management ability to live in a self-directed manner with the basic skills and qualities necessary for one’s life and career with strong self-identity and confidence;
- ✓ the ability to process and utilize knowledge and information in various areas to solve problems with reasoning;
- ✓ the creative thinking ability to create new things by combining knowledge, skills, and experience in a wide range of professional and specialized disciplines based on a broad range of basic knowledge;
- ✓ the aesthetic emotional capacity to discover and enjoy the meaning and value of life based on the sympathetic understanding of human beings and cultural sensibility;
- ✓ the communication ability to effectively express one’s thoughts and feelings in various situations, and listen to and respect the opinions of other people; and
- ✓ the community capacity to actively participate in community development with the values and attitudes required by members of local, national, and global communities.

(Korean Ministry of Education, 2016, Lee, Choi, & Chun)

Other jurisdictions, while not having explicit statements for the kinds of citizens they wish their school systems to develop, nevertheless make their aspirations clear through their curricula. For example, the general part of the Estonian curriculum describes general human values and the intention to develop ethical citizens, and outlines broad principles and purposes for learning. Finland’s National Core Curriculum for Basic Education 2014 places a high priority on human well-being and the development of well-rounded citizens. These are also priorities in Hong Kong’s curriculum.

In Summary

To create and maintain the kinds of societies they wish to become, these jurisdictions have identified desirable personal attributes and dispositions. These include being independent and self-motivated; democratic and respectful of others; adaptable in the face of change; committed to ongoing learning and personal development; thoughtful, knowledgeable, and engaged in society; and creative, self-motivated, and entrepreneurial. Schools are seen to have a crucial role in promoting values and attributes of these kinds.

Goals for Student Learning

These jurisdictions' aspirations for the outcomes of schooling are reflected in the goals they have set for student learning and development through their school curricula. As a general observation, these goals have become broader in recent decades, encompassing much more than subject-specific knowledge and skills. The school curriculum is now generally defined to include goals for students' intellectual, social, emotional, physical, and ethical development. The focus of the curriculum is not only on what students know and can do, but also on the development of personal attributes, dispositions, and habits, often extending to attitudes and values.

Most jurisdictions have developed statements of overarching goals for student learning and development. For example, as part of major reforms to the Hong Kong school system in 2000, the territory's Education Commission set out broad aims for every student's rounded development (Education Commission, 2000; see Box 2.4). Hong Kong subsequently developed specific but overlapping goals for preprimary, primary, and secondary schooling. The seven goals for secondary education are shown in Box 2.5 (Education Bureau, 2017). To broaden the types of learning experiences available to all students, Hong Kong requires schools and teachers to incorporate five 'essential learning experiences' into their teaching and learning: moral and civic education; intellectual development; community service; physical and aesthetic development; and career-related experiences. In a similar vein, British Columbia has grouped its objectives for K–12 education into three goals: intellectual development, human and social development, and career development (British Columbia Ministry of Education, 1989; see Box 2.6).

Box 2.4 Broad Goals for Student Learning: Hong Kong

The Education Commission has set out the purposes of promoting the all-round development and lifelong learning of all students in the aims of education, which is to enable every person to attain all-round development in the domains of ethics, intellect, physique, social skills, and aesthetics according to his/her own attributes so that he/she is capable of lifelong learning, critical and exploratory thinking, innovating and adapting to change; filled with self-confidence and a team spirit, willing to put forward continuing effort for the prosperity, progress, freedom and democracy of their society, and contribute to the future and well-being of the nation and the world at large.

(Education Commission, 2000, p. 5)

These jurisdictions' goals for student learning include the acquisition of a broad and deep knowledge base in traditional school subjects, including national language(s), mathematics, sciences, and social sciences. However, there has been a shift over time away from content-heavy curricula that provide large amounts of factual and procedural detail to curricula designed to develop deeper subject knowledge and more meaningful understandings. This has usually meant giving greater priority to essential disciplinary concepts and principles and students' abilities to transfer and apply those understandings to practical situations.

Box 2.5 Goals for Secondary Student Learning: Hong Kong

The updated seven goals in secondary education are to:

- ✓ lead a healthy lifestyle with active participation in physical and aesthetic activities, and to appreciate sports and the arts;
- ✓ become proficient in biliterate and trilingual (Cantonese, English, and Putonghua) communication for better study and life;
- ✓ use information and information technology ethically, flexibly, and effectively;
- ✓ acquire and construct a broad and solid knowledge base, and to understand contemporary issues that may impact on students' daily lives at personal, community, national, and global levels;
- ✓ develop and apply generic skills in an integrative manner, and to become an independent and self-directed learner for future study and work;
- ✓ become an informed and responsible citizen with a sense of national and global identity, appreciation of positive values and attitudes as well as Chinese culture, and respect for pluralism in society; and
- ✓ understand one's own interests, aptitudes, and abilities, and to develop and reflect upon personal goals with aspirations for further studies and future career.

(Education Bureau, 2017, p. 6)

A high priority is also given to the development of cognitive skills such as the ability to reason, analyze systematically, think independently, think critically, and solve problems. These jurisdictions' goals for students also include the development of basic learning skills, such as the metacognitive ability to monitor one's own understanding, identify gaps in knowledge, and source additional information when required.

Students are also expected to develop a range of social dispositions and skills, including the ability to collaborate with others and work as a member of team. The curricula of these jurisdictions promote respect for pluralism, a level of tolerance for the ideas and beliefs of others, and deeper cross-cultural understandings. Common goals are to develop a sense of social responsibility, establish foundations for informed and responsible citizenship, develop greater understanding and respect for one's own culture, and to establish a sense of national and global identity.

In recent years, school curricula in these jurisdictions have given greater priority to the development of students' capacities for creative thought and expression, abilities to innovate and create new value, and skills of entrepreneurship. And they have sought to develop students' abilities to make effective uses of new technologies and to use information wisely and ethically.

Curricula have also identified more explicitly the kinds of personal skills and attributes schools are expected to develop. These include a positive attitude to learning, curiosity about the world around them, and a commitment to ongoing, lifelong learning. Students are expected to become increasingly independent, self-reliant, and self-directed learners, with a strong growth mindset and a growing appreciation of their own interests and abilities. The curricula in these jurisdictions also include the intention that students will develop career interests, effective work habits, and the flexibility to manage ongoing change, and will be ambitious for their own futures and set and monitor personal goals. And all jurisdictions expect students to develop an appreciation of the importance of a healthy lifestyle and to engage in physical activities.

Box 2.6 Goals for K-12 Learning: British Columbia

The three goals of K–12 education are listed below.

- 1 Intellectual development (prime goal of public schools supported by the family, and community):
 - to develop the ability of students to analyze critically, reason and think independently, and acquire basic learning skills and bodies of knowledge; and
 - to develop in students a lifelong appreciation of learning, a curiosity about the world around them and a capacity for creative thought and expression.
- 2 Human and social development (goal shared among schools, the family, and community):
 - to develop in students a sense of self-worth and personal initiative;
 - to develop an appreciation of the fine arts and an understanding of cultural heritage;
 - to develop an understanding of the importance of physical health and well-being; and
 - to develop a sense of social responsibility, and a tolerance and respect for the ideas and beliefs of others.
- 3 Career development (goal shared among schools, the family, and community):
 - to prepare students to attain their career and occupational objectives; and
 - to assist in the development of effective work habits and the flexibility to deal with change in the workplace.

(British Columbia Ministry of Education, 1989, D-89)

In Summary

In these jurisdictions, curriculum goals for student learning and development have been broadened over time to address more explicitly not only students' intellectual development, but also their social, emotional, ethical, and physical development and well-being. In some jurisdictions, high-level statements of broad goals of schooling have been developed to guide the work of teachers and schools. These statements may include goals for developing students' attitudes and values.

3

Equity and Inclusion



These five jurisdictions have been reconsidering not only the kinds of learning, personal development, and outcomes schools should now be promoting, but also the kinds of learning environments and conditions required for every student to learn successfully. These conditions include access to high-quality teachers and teaching for every student; the full inclusion of every student in schooling, regardless of their background, circumstances or needs; and the provision of additional resources and support to every student who requires them. These conditions also include a greater focus on ‘student-centered’ teaching and learning that is tailored to the interests, aspirations, and learning needs of individual learners. And most jurisdictions are working to create conditions that are less constrained by time and space and that enable learning beyond classrooms, school facilities, and school timetables.

Inclusive of All

A deep-seated intention of all these jurisdictions is to provide every child and young person with access to a similarly high-quality education. This intention is grounded in a sense of social justice and fundamental student entitlement, and is reflected in common references to ‘equality of opportunity’, ‘enabling every student to achieve their potential’, and ‘leaving no student behind’.

Efforts to achieve equality of opportunity have included the development of common, jurisdiction-level curricula and standards, and initiatives to ensure consistent quality of teaching and school leadership throughout the system. These efforts have sometimes led to decisions to centralize functions that once were performed locally. Korea made a decision of this kind after the Second World War in an effort to ensure nation-wide consistency of educational provision. British Columbia, too, has made decisions to centralize, decentralize, and recentralize functions at various times in its history as the province’s governments have changed. In all five jurisdictions, there has been a need to balance the desire for greater local decision-making with the goal of ensuring that all students have access to consistent, high-quality schooling.

Another strategy has been to remove structural impediments to equality of opportunity such as different kinds of schools offering different kinds of educational programs. The most striking example is Finland’s introduction of comprehensive schools in the 1970s for students in Grades 1 to 9, replacing parallel school systems that prepared students for different destinations with schools intended for all students. The decision to provide free education to all students to at least ninth grade (and now to 12th grade) in these jurisdictions was also designed to give all students equal access and equal opportunity. Similarly,

within-school tracking arrangements that assigned students to different streams based on their varying attainments and likely destinations have been largely removed in favour of more inclusive teaching arrangements, at least in the years prior to upper secondary school.

Other strategies for ensuring every student has access to a high-quality education have included the provision of differentiated support for students who require it. Some strategies of this kind are described in Chapter 7. They include additional resources and support for students from lower socioeconomic backgrounds and students living in rural and remote locations, inclusive arrangements for Indigenous students, initiatives to support the learning of immigrant students, and programs and support for students with special needs. Most jurisdictions track the performances and needs of various student groups in an effort to close gaps and ensure that all students have access to high-quality teaching and learning.

Despite their efforts to provide equality of opportunity, these jurisdictions understand that many inequalities remain in their schooling arrangements. There is often variability in the quality of teachers and teaching in different regions, school districts, and schools. Parents and the community do not always perceive schools to be providing equally high-quality teaching and learning and, in most jurisdictions, there is strong competition for entry into ‘elite’ schools. In wealthier suburbs of large cities, students have opportunities that are generally not available to students in rural areas. And although they may be somewhat smaller than in most OECD countries, socioeconomic gaps in student attainment are marked and either unchanged over time or—in the case of Finland recently—increasing.

With the exception of British Columbia, tracking remains a feature of upper secondary schooling, with students being tracked into academic and vocational schools or streams, usually with vocational learning being viewed as the less desirable option, and vocational qualifications being seen as of lower value than academic qualifications. Across these jurisdictions, efforts are being made to achieve greater parity of esteem, including through Korea’s ‘meister’ vocational schools. In Finland, students in both the general and vocational upper secondary tracks can sit the same university entrance examination and, in this sense, have equal access to university. However, in general, upper secondary tracks are not viewed as providing equal opportunities. In Korea, the valued path is from academic study into a leading university and then into a career in a major corporation—a path available to a relatively small percentage of the student population.

In British Columbia, although students are not tracked into academic and vocational streams, universities and other postsecondary institutions identify specific courses required for admission to different departments. Courses recognized for university admission historically have been viewed as of higher value. As a result, course selection beginning in Grade 10 has an impact on students’ postsecondary opportunities following Grade 12 graduation.

In these jurisdictions, as in most school systems around the world, there is sometimes scepticism about the ability of education to deliver equality of opportunity. With increasing social polarization, education may be seen less as a path out of disadvantage than a mechanism for reinforcing and reproducing the advantages of an educated social elite.

In Summary

There is a commitment in all five jurisdictions to ensuring that every student is fully included in schooling and that all students have opportunities to succeed and ‘achieve their potential’. This is reflected in efforts to ensure equal access to a common curriculum, high-quality teachers and teaching, and quality schools. Efforts have been made to remove structural impediments to equal provision such as selective schools and tracks/streams that limit some students’ opportunities. Differentiated support to student groups and individuals is provided where required to ensure inclusion.

Learner-Centered

One of the most significant changes to school learning environments in these jurisdictions over recent decades has been the introduction of what most refer to as more ‘learner-centered’ or ‘personalized’ conditions for learning. All five jurisdictions have identified this as an objective, and almost all have been pursuing this intention for a number of years.

Underlying this objective is the desire to see every student learn successfully and to ‘do what’s best for individual learners’. These jurisdictions recognize that individual success depends on recognizing and responding to individuals’ varying needs. Finland’s national core curriculum refers to the ‘uniqueness’ of each student and the entitlement of every student to have their needs met. British Columbia’s Ministry of Education notes that a student-centered education system involves the provision of ‘high-quality and engaging learning opportunities that aim to meet the diverse needs of individual students’, and that this includes recognizing that not all students learn at the same rate, or in the same way. Across these five jurisdictions, there have been increasing efforts to create school learning conditions that are more responsive to individual learners’ interests and aspirations, levels of attainment, rates of progress, and learning needs.

Learner-centered approaches are seen as an alternative to standardized approaches that provide all students with identical learning conditions and experiences. In most of these jurisdictions, attempts have been made, with varying degrees of success, to move away from relatively inflexible, centrally specified curricula toward curriculum frameworks that allow teachers to respond to individuals and their needs. Estonia is an example of a country that has used local school autonomy and greater teacher choice to meet the varying needs of students. In 1987, an Estonian Teachers’ Congress called for a new school curriculum that would transform education from a traditional ‘teacher-centered’ system to a more democratic ‘child-centered’ approach. The call was for a curriculum focused less on the delivery of subjects, and more on the development of individual learners, including by giving students greater control over their own learning. In many ways, in introducing its new curriculum, Estonia followed the lead of Finland which had earlier developed a vision for more humanistic, child-centered schooling as opposed to more Germanic, syllabus-driven models of schooling.

Similarly, the report of the Royal Commission on Education in British Columbia in the 1980s (Sullivan, 1988) called on the government to make school education more responsive to the needs of individual learners. The general intention was that, rather than expecting all students to fit the school system, the system should be redesigned to meet the needs of all students. A goal of Hong Kong’s ‘Learning to Learn’ curriculum reforms in the early 2000s was to shift the focus of schooling from teaching to learning and to plan, think, and act from students’ perspectives as learners. And Korea’s 2019 National Education Conference called for the redesign of the Korean curriculum to make it more ‘personalized’ and responsive to the learning needs of individuals.

A more learner-centered or personalized approach has been pursued in these jurisdictions by making the curriculum less prescriptive and by giving schools and teachers greater flexibility in when and how students learn. In both Hong Kong and Korea, the introduction of more learner-centered approaches followed periods in which curricula were highly prescriptive. In general, the intention has been to make learning less passive and reproductive, and more relevant and meaningful to individual learners. Teachers have been encouraged to present students with interesting personal challenges and problems, and to promote curiosity and self-directed learning. A common intention is to give students more control (or agency) over their own learning, including by encouraging them to set their own goals for learning, and to plan, monitor, and evaluate their own learning progress.

In upper secondary schools, learner-centered approaches are providing significant flexibility and choice in what and how individuals learn. Most of these jurisdictions have been introducing more flexible learning pathways that provide greater individual choice, coupled with higher levels of support for students in choosing personal pathways to future careers.



In Summary

Over recent decades, efforts have been made in these jurisdictions to recognize students' diverse learning needs and to give teachers and schools more flexibility to address individuals' interests and aspirations, levels of attainment, rates of progress, and learning needs through more 'student-centered' or 'personalized' teaching and learning. Strategies include differentiated teaching and greater student choice in setting learning goals and monitoring progress.

Lifelong and Life-Wide

School learning environments in these five jurisdictions are also being reformed to provide greater flexibility in when and where students learn. In the past, learning occurred largely within the confines of classrooms and relatively rigid school timetables. But in these school systems, learning is being reconceptualised as an ongoing and potentially lifelong process and efforts are being made to provide more flexibility in when learning occurs and to promote learning in contexts beyond classrooms and schools, including through the wider use of technologies.

An objective of these reforms has been to support students' smooth and flexible progress through different stages and types of education. In its goals for 2035, Estonia envisages a 'seamless' future education system in which students are able to progress in their learning unimpeded by artificial transition points that often function as disjunctures in the continuity of individuals' learning. The intention of Estonia's Education Strategy 2035 is to provide every learner with opportunities tailored to their needs at all stages on their learning trajectory, and to do this across the lifespan.

Hong Kong also promotes a progressive or developmental view of learning. A 2020 task force observed that the progressive development of knowledge, skills and attitudes in primary schools lays the foundations for students' ongoing learning and development at the secondary level, and recommended that schools 'give due attention to the interface between key stages in respect of learning and teaching with a view to providing holistic and progressive learning experiences for students' (Task Force on Review of School Curriculum, 2020, p. 37). In common with most other jurisdictions, there is a strong intention in Hong Kong that learning should be progressive in the sense that current learning builds on prior learning and lays the foundations for future learning, and efforts have been made to ensure that clear progressions of learning underpin and give sequence to the school curriculum.

In these jurisdictions, the observation that learning is a potentially ongoing process is giving rise to more flexible arrangements for the timing of student learning—for example, decisions about when individuals progress to the next stage of their learning. In 2019, the Government of Finland proposed reconfiguring preprimary education and the first two years of primary school into a more coherent phase of learning that would allow children to move flexibly to the next level when they were ready. In contrast, most traditional ways of organizing learning have students move to the next stage of learning in unison upon the elapse of an allotted period of time. In other words, rather than holding learning expectations constant and allowing the time required to meet those expectations to vary, the allotted time is held constant with resulting variability in the points students reach in their learning. Under more flexible learning arrangements, the intention is for students to advance through levels and stages of learning based on demonstrated mastery rather than elapsed time.

As well as providing greater flexibility in the timing of learning, these jurisdictions have introduced greater flexibility in contexts for learning. For example, Hong Kong has promoted more ‘experiential’ learning outside schools. The intention is to encourage active, real-world learning by giving students opportunities to apply what they are learning to meaningful situations and problems. The Hong Kong curriculum requires schools to incorporate a range of ‘life-wide’ learning experiences, including career-related activities, moral and civic education, and community service, as contexts for developing student competencies and attributes, including attitudes and interpersonal skills. Life-wide learning grants are provided to schools and can be used to develop partnerships for student learning with the business sector, non-government organizations, and other non-education bodies. Similarly, the Estonian National Curriculum (1996) provides the possibility of students engaging in learning outside schools if it promotes learning outcomes in a school’s curriculum.

These jurisdictions all expect digital technologies to play a growing role in shaping future school learning environments and enabling more personalized teaching and learning. Experiences during the COVID-19 pandemic between 2020 and 2021 provided practical illustrations of technology’s potential to free teaching and learning from the traditional constraints of time and space—as well as insights into some of the challenges.

As part of its strategic planning for 2035, Estonia anticipates increasing use of modern digital technologies to support more effective and efficient teaching and learning across the lifespan. Korea’s vision for the future of school education also anticipates increasing use of digital technologies in teaching and learning, with far-reaching implications for all aspects of its learning system. These include the development of more personalized curricula; the strengthening of teachers’ roles as coaches, consultants, and counsellors; the support and development of teachers’ digital literacy skills; the evolution of artificial intelligence tutors into systems for promoting high-level thinking, problem-solving, creativity, and planning; and digital assessments that continually monitor and record learning and support growing portfolios of evidence of learning.

In Finland, upper secondary learning materials and matriculation examinations were converted to digital delivery between 2016 and 2019, at the same time maintaining essay style assessment tasks and open-ended mathematical problem-solving.

Hong Kong has been building technology-enabled learning environments through a series of multi-year strategies over the past two decades. These strategies have steadily built infrastructure for learning; developed teachers’ abilities to integrate new technologies into their teaching; changed school learning cultures and pedagogies; promoted professional communities of practice; and built growing banks of online learning resources. As a result, most schools in Hong Kong were able to implement online teaching and learning when schools were closed during the COVID-19 pandemic.



In Summary

Desired conditions for learning include greater flexibility in when and where student learn. These jurisdictions see learning as ongoing, potentially lifelong, and not only occurring within traditional school timetables. Efforts are being made to minimize the impact of transition points and to enable students to advance based on demonstrated mastery rather than the elapse of time. They also see learning as ‘life-wide’ and actively promote ‘experiential’ learning in non-school settings. At the same time, greater use of technologies is providing more flexibility in when and where students learn.

4

A Quality Curriculum



Chapter Key Themes

Core characteristics of a world-class curriculum as informed through data, evidence, and observations from British Columbia, Estonia, Finland, Hong Kong, and South Korea:

- Curriculum is **structured around traditional disciplines** such as national language and literature, mathematics, science, and the social sciences.
- Curriculum gives **high priority to developing students' deep understandings of essential disciplinary concepts, principles, and methods** which may be relatively few in number.
- Mastery of factual and procedural knowledge is recognized as essential to deep learning in a discipline, but is developed in a context in which **conceptual understanding is prioritized over rote memorization.**
- Curriculum provides opportunities for students to **develop deeper conceptual understandings and apply their learning** to a variety of meaningful, often real-world, contexts.
- **Skills in applying knowledge** ('transversal skills' or '21st century skills') are an **integral part of a discipline** rather than stand-alone competencies. Growing proficiency in a discipline includes growing abilities to think critically and creatively, to solve problems, apply technologies, collaborate, and communicate.
- **Student learning is driven by intrinsic motivators such as curiosity and wonder,** rather than extrinsic motivators such as high-stakes tests and exams.
- Curriculum is designed to **support teachers to provide learning opportunities appropriate to students' backgrounds, starting points, and learning needs.** Curriculum is flexible to adapt to local circumstances and address the needs of individual learners.
- Curriculum **recognizes a distinction between equality and equity,** and is inclusive of all students. It expects every student to eventually achieve the same high standards, and adapts to individuals' varying cultural and language backgrounds, interests, and educational needs.

Promoting Deeper Disciplinary Learning

In these five school systems there has been a strong and continuing emphasis on the development of students' knowledge and understanding of traditional disciplines in the humanities, social sciences, natural sciences, and mathematics. All students are expected to study a core set of discipline-based subjects through primary and lower secondary school. However, the focus of disciplinary learning has changed over time to give greater priority to students' conceptual understanding and abilities to transfer and apply knowledge to non-routine problems and contexts.

Structuring the Curriculum around Disciplines

The disciplines provide the primary structure for the curriculum in all five jurisdictions. In some systems, including Hong Kong and Estonia, subjects are now grouped into broader learning areas, but there continues to be a strong emphasis on disciplinary teaching and learning. As a result, the curriculum in these systems is often described as 'academic' and sometimes 'conservative'. In Estonia, the teaching of traditional disciplines has a long history and was firmly established during the Soviet era. Despite significant curriculum reform since that time, current syllabi have a solid academic base and provide students with relatively high levels of disciplinary knowledge. In Finland, too, despite some beliefs to the contrary, the school curriculum is strongly academic and teaching tends to be traditional.

In the past, curricula in these systems were centrally prescribed in considerable detail. The curriculum was often couched in terms of what teachers were required to teach, and so was teacher-centric in nature. For example, early curricula in British Columbia consisted of lists of topics to be taught in each subject in each grade, accompanied by recommended time allocations. These topics were elaborated in centrally prescribed textbooks, which were often more influential in practice than the documented curriculum. By the mid-1970s, to provide clearer direction to teachers, British Columbia's curriculum specified what 'must be taught', 'should be taught', and 'might be taught' in each subject in each grade (British Columbia Ministry of Education, 1977, cited in Mussio & Dubensky, 2021, p. 55). Subsequent curriculum guides were informed by the core curriculum and were often accompanied by additional resource books, which provided suggestions on how the approved textbooks could be used to address the desired learning outcomes in the curriculum.

Similarly, the National Core Curriculum in Finland from 2004 specified aims, content, and assessment criteria by subject and grade, with recommended time allocations. Such tight central prescriptions were common at this time. The intention was to ensure that all students had equal access to a quality curriculum and high educational performance was promoted throughout the system.

However, in all five jurisdictions there has been concern over time about the amount of content students have been expected to learn (see Box 4.1). At various times, curricula have been described as 'overcrowded' and 'content-heavy' with facts and procedures. There has been concern that curricula have encouraged rote learning and memorization of material, often for demonstration in tests and examinations, which have reinforced learning of this kind. And with large amounts of factual and procedural content to be learnt, individual subjects have remained siloed, with few opportunities for students to build connections across subjects.

Concerns over the amount of content specified in curricula have included concerns about the kinds of learning that overcrowded curricula encourage. By emphasizing the memorization of large numbers of facts and the mastery of many routine processes, subjects have often not reflected, or built students' appreciation of, the nature and relevance of their underlying disciplines. For example, the heavy emphasis on factual learning in the Estonian science curriculum prior to 1991 left little time for the development of higher-order thinking in science or for scientific inquiry skills such as formulating and testing hypotheses. Although the development of a substantial body of factual knowledge is essential in every discipline, the

focus on memorizing and reproducing content in these systems often encouraged superficial learning to provide right answers rather than deep conceptual understanding and an appreciation of the meaning and practical relevance of what students were learning.

By 2010 in British Columbia, teachers' concerns about curriculum overload resulting from lists of detailed, content-based learning outcomes led the Ministry in its 2011 Education Plan to streamline the curriculum to provide less emphasis on facts and more emphasis on understanding concepts and developing competencies through opportunities for discovery, creativity and problem-solving. An objective of the resulting new curriculum was to 'prescribe less and enable more' by focusing on 'fewer, but more important' learning outcomes (British Columbia Ministry of Education, 2011).

At the same time, there was growing questioning in these systems of how well the existing school curriculum was preparing students for their futures. All five jurisdictions recognized that the world, including workplaces, was changing rapidly. Factual information was becoming increasingly accessible through technology. Machines were now performing many of the routines that schools had traditionally taught, and advances in artificial intelligence were enabling activities such as analysis and decision-making to be increasingly automated. And with the pace of change, the future was increasingly unpredictable. The new challenge for schools was to equip young people to succeed in an uncertain future.

A general conclusion was that low-level knowledge and skills would not adequately prepare students for this future. Hong Kong's Learning to Learn curriculum reforms of the early 2000s were designed to focus learning on preparing students for the future, including by providing them with deeper knowledge, conceptual understanding, and skills in analysis and synthesis. The aim was to place less emphasis on what students know, and more emphasis on what they can do with what they know—often now referred to as a shift in emphasis from knowledge to competence. From 2004, Finland's curriculum also began to give greater priority to the development of competence and to students' skills in applying disciplinary knowledge. This became clearly visible in the 2014 curriculum. And the development of British Columbia's 2011 Education Plan reflected growing concerns (including by the minister of the time) about how well the existing content-heavy curriculum was preparing young people with the knowledge, skills, and attributes the future would require.

These questions about how well the curriculum was preparing students for their futures were part of a longer-term trend in these systems from a focus on teachers and what they should teach to a focus on learners and what they should learn. This is sometimes described as a move from the German-inspired *lehrplan* tradition to an American-inspired focus on objectives for student learning, as espoused by curriculum theorists Ralph Tyler and Benjamin Bloom (Ouakrim-Soivio & Kupiainen, 2021). During the 1970s, in common with many other systems, British Columbia began specifying intended learning outcomes rather than topics to be taught. This trend toward a more learner-centric curriculum was evident in all five jurisdictions. Hong Kong's 2002 curriculum provided a new focus on learners and learning. Finland's National Core Curriculum, which continues to reflect both traditions, saw a transition between 1985 and 2014 from tightly specified teaching objectives to more broadly defined learning outcomes, including in the upper secondary school. This included some freeing up between 1985 and 1994, a return to tighter specification in 2004, and then the introduction of a competence-based curriculum in 2014.

In Summary

While these school systems have historically structured their curricula around traditional disciplines—and continue to do so—all have moved to reduce the degree of central prescription and to address concerns about the volume of factual and procedural content teachers are expected to teach and students are expected to learn. Greater priority is now being given to students' conceptual understandings and skills in transferring and applying disciplinary knowledge. More generally, curricula are less focused on specifying content teachers are to teach and more focused on identifying the knowledge, understandings, skills, and attributes students will require for their futures.

Box 4.1 Concerns Over Content-Heavy Curricula

British Columbia had a detailed school curriculum over recent decades. In the 1980s, its curriculum was contained in more than 30 documents providing sequencing, assessment, and resources for most subjects and grades. This amount of detail was confusing and unmanageable for many teachers, especially those in K–7, who, unlike those in secondary schools, typically taught all, or most, subject areas. The Sullivan Commission noted that this situation was due, in part, to the fact that each subject was treated as a separate entity in the curriculum development process and contributed to the sense of fragmentation and ‘curriculum overload’. As a result, textbooks, which continued to be prescribed throughout the grades, and provincial examinations, which were reinstated in secondary schools in the 1980s, continued to have a significant influence on what was taught and learned.

The British Columbia curriculum from the 1990s responded to public concerns that some of the education changes after the 1988 royal commission were introduced at too rapid a pace and lacked clear information about the learning standards expected of children in schools. The new curriculum, responding to earlier concerns over fragmentation, adopted a common format across subject areas and took the form of Integrated Resources Packages (IRPs). The IRPs specified learning outcomes, suggestions for instruction, assessment ideas, and Ministry-recommended resources. Again, however, K–7 teachers had to work with lengthy, multiple subject-based documents of this kind. Adding to the workload in the early 2000s, many teachers across the grade levels interpreted newly added achievement indicators as required activities. As a result, the prescribed learning outcomes of IRPs presented significant, if not impossible, challenges for many teachers, some of whom saw the curriculum as a content-heavy ‘checklist’.

Prior to Estonia's restoration of independence in 1991, the school curriculum was heavily factual. Learning often involved memorizing large numbers of facts (such as terms in biology). Today, there is ongoing concern in Estonia that too much content is specified in the curriculum, particularly in the lower secondary school where the curriculum is considered to be overcrowded with little flexibility.

Box 4.1 Concerns Over Content-Heavy Curricula (*continued*)

In Finland, there is concern that the continual addition of content has resulted in an ‘information-oriented’ curriculum in which subjects are too detached from each other. The 1985, 1994 and 2004 curricula varied in their degrees of prescription, and this was reflected in their varying sizes. The 2014 curriculum brought a new emphasis on competences.

In Hong Kong, prior to the territory’s return to China in 1997, the curriculum consisted of content-heavy syllabi that prepared students for examinations at the completion of lower secondary and upper secondary school. In common with other East Asian countries, Hong Kong has worked to reduce the amount of rote learning required of students to create time for broader learning experiences and other forms of learning. Through its Learning to Learn curriculum in 2002, Hong Kong trimmed curriculum content and also abolished the examination at the end of lower secondary school.

In revising its curriculum in 2015, the Korean Government recognized a need to address the problem of “an excessive amount of learning caused by a curriculum centered on segmented and fragmented knowledge” and observed that “the learning burden, overloading with academic pressure and excessive workload to memorize, with a focus on getting right answers, caused students to lose interest in meaningful learning.” The proposed solution was to replace traditional knowledge-based classes and rote learning with other forms of learning.

(Korean Ministry of Education, 2016, Lee, Choi, & Chun)

Making Time and Space for Deeper Learning

To create time and space in the curriculum to promote deeper conceptual understanding and to provide opportunities for students to apply knowledge, most of these systems have reduced the amount of curriculum content. Long lists of precisely specified instructional objectives have been replaced by shorter lists of broadly defined essential facts, concepts, and principles. Curriculum documents have been reduced in volume and textbooks have been made slimmer. A textbook for the first grade in Estonia that once contained 100 pages may now be half the size. The Grade 5 Social Studies curriculum (Integrated Resources Package) in British Columbia that once consisted of 70 pages is now summarized on a single page (National Center on Education and the Economy, n.d., p. 6). In Hong Kong, a 2020 task force recommended further trimming of the primary school curriculum and a reduction in the content of core subjects in the upper secondary school to enable more in-depth learning (Task Force on Review of School Curriculum, 2020). Across these systems there has been an explicit belief that ‘less is more’ and that a reduction in the amount of factual and procedural content is necessary to create more time for deeper learning. Finland may be an exception here. Although some reduction occurred in 1994, the 2014 curriculum for primary and lower secondary school was 452 pages in length and there is a view that, while material is continually added, nothing is taken away.

New curriculum documents have defined what is intended by deeper learning. Reforms to the Hong Kong curriculum in the early 2000s identified ‘learning for understanding’ as a key objective. This would require less rote learning and more opportunities for students to construct and apply knowledge. Rather than being passive recipients, students would engage in active learning experiences that would build their understandings over time. In Korea, the 2015 curriculum revision sought to break away from an approach that was ‘oriented toward knowledge acquisition’. Subject content was to be structured around core concepts to enable ‘meaningful learning experiences’, and a new emphasis would be placed on competencies such as thinking and exploration—for example, by giving greater priority to the analysis and interpretation of source materials in history (Lee et al., 2021).

The curriculum introduced in British Columbia from 2016 sought to ‘increasingly emphasize key concepts, deeper knowledge, and more meaningful understanding of subject matter’ (British Columbia Ministry of Education, 2015, cited in Learning First, 2018, p. 6). This was to be achieved by streamlining the existing curriculum and organising learning around ‘big ideas’ in each subject. The stated intentions included less prescription, fewer things to teach, less memorization of facts, more time and space to support student learning, a greater focus on important concepts and big ideas, and deeper learning to enable knowledge transfer and application (Mussio & Dubensky, 2021). The new curriculum specified a shorter list of content for each subject and grade (what students are expected to know); big ideas that students should understand in a subject by the end of each grade; and a set of subject-specific competencies describing what all students should be able to do in each subject by the end of each grade.

Although most school systems continued to organize their curricula by subject and grade, some attempted to create more time and space for deeper learning through more flexible curriculum structures and learning arrangements. Hong Kong replaced subjects with eight broad ‘Key Learning Areas’ (KLAs) and identified general learning intentions for each KLA rather than specific subject outcomes. The KLAs were introduced as contexts for developing not only knowledge and understanding, but also student competencies, attitudes, and values. Schools and teachers can organize KLAs into smaller units of learning such as subjects and learning modules if they choose. In addition, Hong Kong introduced the concept of ‘life-wide’ learning to encourage teaching and learning not only in schools, but also in contexts beyond schools. Since 1996, Estonia has structured its curriculum into three-year stages and, since 2010, has organised subjects into Key Learning Areas (broad subject fields) (I. Henno, personal communication, 10 December, 2019). Although Finland continues to organize its curriculum into subjects, it assesses student learning in terms of general competence goals.

And in a further attempt to provide schools and teachers with greater flexibility, Hong Kong changed the way curriculum targets and objectives are specified in the curriculum, from individual grades to stages of school (grade spans). In this way, schools were freed to decide on the best ways to achieve learning intentions and develop deeper understandings within each grade span.

Across all five jurisdictions, changes of these kinds have been made to replace curricula dominated by tightly prescribed teaching objectives for each subject and grade with more flexible curricula focused on the long-term development of increasingly sophisticated knowledge, deeper conceptual understandings, higher-order skills, and a range of desired personal attributes. In some jurisdictions, this is referred to as shifting the focus from the learning of ‘content’ to the development of ‘competences’.



In Summary

These school systems have attempted to create more time and space in their curricula for deeper learning (defined as learning that results in more sophisticated knowledge and conceptual understanding, and skills in applying that knowledge to meaningful contexts and problems). This has usually involved a move away from long lists of teaching objectives specified for each subject and grade. Strategies have included reducing the overall volume of factual and procedural content, introducing more broadly defined learning areas, promoting both in-school and out-of-school learning, and specifying learning goals for broader grade spans.

Promoting Learning through Transfer and Application

A feature of many of these curriculum reforms has been the introduction of more opportunities for students to apply what they are learning to meaningful contexts and practical problems. Underpinning this intention has been recognition that deep understanding—for example, of core concepts, principles, and methods of a discipline—facilitates transfer to new and unfamiliar contexts. And conversely, opportunities to apply learning in different situations builds student understanding. The creation of opportunities for practical application was an explicit intention of British Columbia’s 1994 curriculum. Similarly, Hong Kong’s new curriculum in 2002 sought to develop deeper student understanding through more frequent applications to ‘real-life’ situations (Goodwin et al., 2021).

As part of its new curriculum in 1996, Estonia required teachers not only to teach factual and procedural knowledge, but also to address higher-order thinking skills in the teaching of subjects. Bloom’s taxonomy, which identifies different levels of cognition (knowledge, comprehension, application, analysis, synthesis, and evaluation), was used as a frame of reference to encourage greater focus on thinking about and using disciplinary knowledge (Bloom et al., 1956). Regulations specified the proportions of examination questions to be developed at each level of this framework. Since 2006, Estonia has placed greater priority on problem-solving and creative tasks in the school curriculum and in examinations, including upper secondary examinations. The same is true of the Finnish matriculation examination with its use of essay-style questions in many subjects.

An increased focus on application was also seen as a way of giving greater meaning to student learning. Pressure to learn large amounts of material for reproduction in tests and examinations often resulted in relatively meaningless learning focused less on understanding than on delivering right answers. There was concern in these systems that students often did not appreciate the meaning or relevance of what they were learning. Better opportunities to see how knowledge could be applied in practice, including to address everyday situations and challenges, had the potential to provide greater meaning and so improve motivation and engagement.

The obvious vehicles for doing this were problems that students could be given to solve, projects they could undertake, and the application of learning to everyday situations in the community. Each of these jurisdictions has promoted the use of problem-solving and projects as contexts for the application of disciplinary knowledge. For example, British Columbia’s current curriculum explicitly promotes the use of more inquiry-based learning, project-based learning, and problem-based learning (C. Ungerleider, personal communication, 21 July, 2020).

These activities also have been seen as contexts for developing skills in knowledge application, such as research skills, critical thinking, creative thinking, communicating, collaborating, and using technologies. In this way, practical applications of disciplinary learning have provided opportunities to bring together and integrate theory and knowledge on one hand, and practice and application on the other.

Problem-solving and investigative activities often require input from different disciplines and so also provide contexts for breaking down boundaries between school subjects—something these systems all identify as desirable. All encourage cross-curricular collaboration and learning. Interdisciplinary teaching was proposed by the royal commission in British Columbia in 1988 (Sullivan, 1988). Hong Kong’s curriculum encourages more cross-curricular collaboration through the integration and application of disciplinary learning to problems and projects. And Korea’s curriculum calls for the linking of learning content between subjects to ‘enable an understanding of the big picture’ (Korean Ministry of Education, 2016, Lee, Choi, & Chun).

Finland’s current national core curriculum requires students to undertake at least one multidisciplinary project each year in primary and lower secondary school. Multidisciplinary learning modules are intended to integrate content from different subjects to address broad topics or ‘phenomena’ such as ‘oil’ and ‘the middle ages’ (Ouakrim-Soivio & Kupiainen, 2021). Although, details are left to schools to decide, teachers are expected to collaborate around these themes and students are expected to be actively involved in design and goal setting. The Finnish Agency for Education has emphasized that ‘multidisciplinary learning modules ... do not replace school subjects. Teaching, learning, and assessing are still based on subjects’ (Finnish National Agency for Education, 2018, cited in Ouakrim-Soivio & Kupiainen, 2021, p. 79).



In Summary

The ability to transfer and apply disciplinary learning is recognized by these school systems as essential to developing and demonstrating deep understanding. Applications of knowledge through activities such as problem-solving and investigative projects are seen not only as ways of developing depth of understanding, but also as opportunities to explore relevance and meaning, and to encourage motivation and engagement. Applications also provide contexts for building skills in applying knowledge and for promoting cross-curricular learning.

Describing and Prioritizing Growth in Competence

The intention to give greater priority to understanding and skills in applying knowledge has presented these systems with the challenge of conceptualizing and describing such learning in their curricula. Each system has addressed this challenge in its own way.

In earlier curricula, a key curriculum development task was to identify and list the factual and procedural knowledge teachers were to teach and students were to learn in each subject in each grade or grade range (for example, Grades 1–2, 3–6 and 7–9 in Finland). The teacher’s role included ensuring this content was taught. Although sequencing was often important, facts and procedures sometimes could be taught in any order. From the student’s perspective, learning was largely a matter of memorizing and mastering this content. Most assessments evaluated how much of the taught content a student could demonstrate and reported this as a percentage, score or grade.

However, this traditional approach has proved less appropriate for the kinds of learning now prioritised by these systems. Deep understandings of disciplinary concepts, principles and methods are usually developed over extended periods of time—often across many years. Learning of this kind does not lend itself to being itemized on a checklist. Similarly, skills associated with knowledge application, such as critical thinking, problem-solving, and collaborating, are developed across the years of school and, unlike specific factual and procedural knowledge, are not readily assessed as present or absent. The shift in focus from memorizing and reproducing information to deeply understanding and being able to apply what is learnt has required new ways of thinking about learning and what it means to learn successfully.

More specifically, the incorporation of such learning into the curriculum has required the adoption of long-term perspectives on learning. Challenges have included clarifying what it means to develop increasingly deep understandings of a particular concept or principle; describing growing mastery of the methods of a discipline (such as methods of inquiry in history); and elucidating the nature of increasing proficiency in critical thinking, creative thinking, and problem-solving. In general, attempts to describe and illustrate learning of these kinds have transcended individual grades of school, and attempts to assess them have been focused not so much on establishing how much of a body of taught content students can reproduce, as on establishing the points individuals have reached in their development of deep understanding and high-level competence. Although practices vary across these school systems, some have attempted to make more explicit in their curricula the intentions of long-term development and learning continuity.

As long ago as 1988, a royal commission in British Columbia proposed a greater focus in the curriculum on continuous progress (Crawley, 1995). The Hong Kong curriculum, too, is strongly based on the concept of ‘vertical progression’ of knowledge and understanding (Goodwin et al., 2021, p. 62). It prioritizes the sequenced learning of material; spiral development through which students revisit learning in increasing depth; and consistency of learning and teaching approaches across different stages of school. For example, to facilitate smooth transitions from kindergarten, primary schools commonly use the same integrated curriculum design in the early years of school. Primary and secondary schools often work together on bridging courses to ensure smooth transitions across the primary–secondary divide. Strategies of these kinds reflect, and are designed to promote, a long-term, developmental view of learning.

Such a view also depends on the description and illustration of progress (or growth) in learning over time. In most of these school systems, this remains a work in progress. Attempts to describe how understandings or competencies develop across the years of school have sometimes resulted in vague descriptions that are open to interpretation. Attempts to describe how a ‘big idea’ develops across a number of years of school sometimes have resulted in descriptions of ‘higher’ levels that are worded very similarly to descriptions of ‘lower’ levels.

A noteworthy initiative in this context is British Columbia’s development of learning progressions (referred to as ‘performance standards’) in reading, writing, numeracy, and social responsibility. Each progression defines four increasing levels of attainment of a specific aspect of the curriculum. Each level is accompanied by samples of student work that illustrate that level (J. Hubert and L. Kaser, personal communication, 27 July, 2020). The reported advantages are that the levels define development (teachers ‘know what improvement looks like’), promote teaching for development, provide a shared language for this, and anchor professional learning to student work. The learning progressions, which were first developed in the late 1990s, are described in British Columbia as part of the move from content-driven to competency-driven learning, and as a key to the mindset shift required by the new curriculum (‘it’s about student development’) (Learning First, 2018, p. 20).



In Summary

Deep conceptual understanding and skills in applying knowledge are not new curriculum priorities in these jurisdictions. However, they invite a particular way of conceptualizing learning success—not as the ability to demonstrate individual facts and routines, but as longterm growth in understanding and competence. This requires curricula built around the concepts of learning continuity, progression, and continual development. Some jurisdictions are making progress with this agenda.

Giving Greater Priority to General Competencies and Personal Attributes

While maintaining a strong focus on disciplinary learning and giving greater priority to the development of students' deeper understandings of essential disciplinary concepts, principles, and methods, these five school systems have also given increasing attention to general skills and attributes that all students are expected to develop through their schooling. In doing this, they have been focused on the future and the broader skills and attributes the future is likely to require. Although priorities have differed from system to system, these jurisdictions have been strongly focused on the kind of society they are working to create, the kind of workforce they believe will be required for their futures, and the kinds of people they wish to see their schools develop.

Broadening the Goals of Schooling

The purpose of schooling has always been broader than the transmission of disciplinary knowledge. Schools have historically played a crucial role in promoting equality of opportunity, enabling social mobility, building social cohesion, preparing students for participation in the workforce, and much more. Nevertheless, within their recent histories, these five jurisdictions have all re-evaluated what they are seeking from their schools and have broadened the goals of schooling (see Box 4.2).

In some jurisdictions, this has occurred at a time of significant change. For example, following the restoration of its independence, Estonia established ambitious new goals for student learning in areas such as higher-order thinking, problem-solving, and democratic decision-making. Its new curriculum, which replaced an earlier curriculum with a heavy emphasis on factual and procedural memorization and recall, was designed to provide the skills and personal attributes required by a modern, democratic, high-tech economy engaged with Western Europe and the world. In a similar way, following its return to China in 1997, Hong Kong undertook an extensive reconsideration of the goals of its school system and substantially changed its curriculum to place a greater emphasis on the development of the 'whole person' (including students' ethical, physical, social, and aesthetic development), and to provide the skills and attributes required for a vibrant modern services economy.

Other jurisdictions have broadened the goals of schooling in response to ongoing changes in society, the economy and the global environment. Their concerns have been that existing curricula were unlikely to deliver the levels of innovation, problem-solving, digital literacy, intercultural understanding, and entrepreneurship that the future would require. This was often accompanied by a belief that greater priority needed to be given to applications of knowledge and to the development of skills in using knowledge.

Some systems created descriptions of the kinds of citizens they wished to see their schools develop. For example, in the 1980s, British Columbia described an 'Educated Citizen' as somebody who is: thoughtful and able to learn and think critically and communicate information from a broad knowledge base; creative, flexible, and self-motivated with a positive self-image; capable of making independent decisions; skilled and able to contribute to society and the world of work; productive and gains satisfaction through achievement while striving for physical well-being; co-operative, principled, and respectful of others regardless of differences; and aware of the rights of the individual and prepared to exercise the responsibilities of the individual within the family, the community, the nation, and the world.

In 2017, the Korean Institute for Curriculum and Evaluation (KICE) observed that the vision and goals of the Korean national curriculum had 'barely changed' over the previous 20 years and called for a new 2030 vision that better reflected current trends and the nature of learning. The resulting Korean curriculum presents a vision of a future citizen who is: 'self-directed' (builds a self-identity and explores a career and life on the basis of holistic growth); 'creative' (discovers something novel by means of diverse challenges and ideas based upon basic abilities); 'cultivated' (appreciates and promotes the culture of

humankind on the basis of cultural literacies and understanding of diverse values); and ‘democratic’ (lives in harmony with others, fulfilling the ethics of caring and sharing as a democratic citizen with a sense of community and connection to the world).

Common to all five school systems has been a decision to broaden the goals of schooling, to place greater emphasis in the curriculum on the development of well-rounded students, and to ensure that this priority applies to everybody. This has been a particularly high priority in Finland with its long-standing commitment to equity, inclusion, student well-being, and the holistic development of every child.

Box 4.2 Broadening the Goals of Schooling

A royal commission established in British Columbia in the late 1980s noted that there had been considerable social change that had led to uncertainty about the school’s purpose and responsibility. This resulted in the government’s adoption of a ‘mandate statement’ that included a description of the ‘educated citizen’—somebody who, among other things, is thoughtful and able to learn and think critically; creative, flexible, and self-motivated; and co-operative, principled, and respectful of others. From 2011, the curriculum was redesigned to provide a more streamlined, ‘competency-based’ approach intended to better prepare students for a changing society and economy. Influenced by the earlier ‘educated citizen’ statement, the 2011 Education Plan also prioritized real-world skills such as innovation, teamwork, cross-cultural understandings, and technological literacies.

Throughout Estonia’s history, but particularly since the restoration of that country’s independence in 1991, Estonians have looked to education for nation building, the maintenance of Estonian culture and language, and personal social mobility. Over time, including through the first national curriculum in 1996, an earlier emphasis on memorization has been replaced by a new focus on problem-solving, democratic decision-making, critical thinking and an awareness of personal responsibility. Influenced by educational thinkers such as Lev Vygotsky and Estonian Hilda Taba, the new curriculum promoted experiential rather than transmissive learning, higher-order thinking skills, and ‘value-related’ competencies (attitudes and values). A high priority has also been given to building skills in the development and use of digital technologies and to promoting entrepreneurial attitudes and competencies since the 2010–2011 curriculum.

In Finland, also, schools have played an important historical role in maintaining and promoting national culture, language, and autonomy. There has been a deep national commitment to student well-being and holistic development, and to seeing every student achieve their potential and become an engaged, productive citizen. This commitment to equity was reflected in the introduction of the Finnish comprehensive school in the 1970s. With Finland’s transition to a modern industrial economy increasingly based on digital technologies, industry leaders called for a focus on a broader set of competencies. The current national core curriculum was designed to develop these, together with ‘competencies required for membership in a democratic society and a sustainable way of living’. These competencies include thinking and learning-to-learn, cultural competence, information and

Box 4.2 Broadening the Goals of Schooling (continued)

communications technology (ICT) competence, and working life competence and entrepreneurship.

Hong Kong society is strongly influenced by Confucian traditions and places a high value on education as the main route to social and socioeconomic status. As Hong Kong transformed from a largely manufacturing economy to a modern services economy, it recognized that new and different skills were required. Reforms began with community-wide considerations of the requirements for success in the 21st century. A decision was made to complement academic knowledge and skills with skills and attributes such as critical thinking, creativity, and communication. A new focus was placed on balanced, ‘whole-person’ development in the areas of ethics, intellect, physique, social skills, and aesthetics. To develop students in these areas, the curriculum introduced five ‘essential learning experiences’: moral and civic education; intellectual development; community service; physical and aesthetic development; and career-related experiences.

In Korea, too, Confucian traditions and values have shaped a society that values education highly and is strongly merit-based. Education has been seen as the path to a good job and increased social status, with selection into the best universities and companies being through competitive examinations. Korean education has contributed to the country’s transformation from a rural society to a modern economy and delivered a highly educated workforce and strong economic growth. However, with recent changes in society and the global environment, the Korean Government has shifted its focus to a more, ‘people-centered’ economy that is innovative and inclusive of all. In schools, a new emphasis is being placed on creativity, cooperation, communication, and consideration for others. The 2015 Revised Curriculum reflects this emphasis through its vision for an independent person, a creative person, a cultured person, and a democratic person.

In Summary

Within their recent histories, all five jurisdictions have re-evaluated what they are seeking from their schools and have broadened the goals of schooling in an effort to develop the kind of society they are working to create, the kind of workforce they believe will be required for their futures, and the kinds of people they wish to see their schools develop. Greater emphasis in the curriculum has been placed on the development of the ‘whole person’ and on ensuring that this priority applies to every learner.

Specifying and Prioritizing General Competencies

As part of their efforts to broaden the goals of schooling to better prepare young people for future life and work, these systems have identified between six and nine general skills (or competencies) to be developed by all students (see Box 4.3). These competencies are referred to using various terms, including core or key competencies, general or transversal competences, and generic or 21st century skills. The intention is that these competencies will be developed through students' learning of school subjects, as well as through extracurricular activities.

In addition to conveying and highlighting the broader purposes of schooling, the specification of general competencies has been part of a move in these jurisdictions from content-heavy curricula and a focus on transmissive and reproductive forms of learning to curricula that provide more time and space for active forms of learning such as discovery, creation, and problem solving (Magnusson & Frank, 2015).

In common with many other school systems, these five jurisdictions have drawn on conceptualizations of general competencies developed and promoted by UNESCO, the OECD, the European Union, and the 2006 council on key competences for lifelong learning (OECD, 2019a, 2020). Influential conceptualizations have been UNESCO's Four Pillars of Learning (learning to be, learning to know, learning to do, and learning to live together) and the OECD's DeSeCo key competencies (acting autonomously, using tools interactively, and functioning in socially heterogeneous groups).

There are clear parallels with the types of general competencies identified by UNESCO's International Bureau of Education: 'core' skills (basic reading and writing skills, numeracy, e-literacy, health literacy and life skills); 'cognitive' skills (such as problem solving, analytical thinking, critical thinking, logic and reasoning, and creativity); and 'soft' skills (such as attitudes, values, ethics, and social skills).

The general competencies prioritized by these five jurisdictions tend to be of four broad types: basic skills, thinking skills, personal skills, and social skills.

Basic skills include literacy and numeracy (although in British Columbia, these are listed separately), ICT/digital skills, and entrepreneurial skills. Estonia's first national curriculum included communication competences, value competences, and operational competences such as study skills and skills in listening, observing and comparing. Several systems list communication skills. In British Columbia, these include sharing and developing ideas; obtaining, interpreting, and presenting information; working together to plan, carry out, and review tasks and activities; and describing/recalling and reflecting on experiences and what one can do (Government of British Columbia, n.d.a). In Korea, communication is defined as the 'ability to effectively express one's thoughts and feelings in various situations, and listen to and respect the opinions of other people' (Korean Ministry of Education, 2016, Lee, Choi, & Chun). Finland's current curriculum includes 'multi-literacy' defined as 'competence in interpreting, producing and making value judgements across a variety of different texts' and basic skills are incorporated into competence-based goals within subjects (Finnish National Board of Education, 2014, p. 22).

Thinking skills as described in these curricula include skills in critical thinking, which in most systems are defined as skills in analyzing and critiquing, questioning and investigating, and developing and designing. Some systems prioritize students' abilities to process and use disciplinary knowledge and information to solve problems with reasoning.

Thinking skills also include skills in creative thinking, defined as skills in generating and developing ideas. Korea defines creative thinking as the 'ability to create new things by combining knowledge, skills, and experience in a wide range of professional and specialized disciplines based on a broad range of basic knowledge' (Korean Ministry of Education, 2016, Lee, Choi & Chun).

Personal skills include self-management or self-regulation, which is listed as a priority by all five school systems. British Columbia defines personal awareness and responsibility as encompassing self-determination, self-regulation, and well-being. The Korean national curriculum sees self-management as the ‘ability to live in a self-directed manner with the basic skills and qualities necessary for one’s life and career with strong self-identity and confidence’. And Finland lists as one of its seven transversal competences ‘taking care of oneself and managing daily life’ (Finnish National Agency for Education, n.d., para.12).

Personal skills also include skills in learning to learn and independent learning. British Columbia prioritizes the development of positive personal identity, including through the development of personal values and choices, as well as personal strengths and abilities.

And the social skills listed in these curricula encompass cultural competence, social responsibility, and community participation. British Columbia emphasizes contributing to the community, caring for the environment, solving problems in peaceful ways, valuing diversity, and building relationships. Finland prioritizes sustainable development of various kinds, including environmental, social, and economic sustainability. And Korea lists the capacity ‘to actively participate in community development with the values and attitudes required by members of local, national, and global communities’ (Korean Ministry of Education, 2016, Lee, Choi, & Chun).

In Summary

These systems have specified between six and nine general skills (or ‘competencies’) to be developed by all students through their learning of subjects, as well as through extracurricular activities. Although these competencies differ from system to system, they can be grouped into four broad categories: basic skills (such as literacy, numeracy and ICT literacy), critical and creative thinking skills, personal skills, and social skills.

Box 4.3 Specifying and Prioritizing General Competencies

British Columbia’s 2011 Education Plan proposed a new curriculum that would include ‘core competencies and skills that students need to succeed in the 21st century’. The current curriculum identifies six core competencies which, together with literacy and numeracy, are to be embedded ‘in every area of learning’:

- communication
- creative thinking
- critical thinking
- positive personal and cultural identity
- personal awareness and responsibility
- social responsibility

The Estonian National Curriculum (1996) included three groups of general competencies. The 2011 curriculum specifies eight ‘general competences’ to be integrated across the curriculum to ‘support growth as a human being and

Box 4.3 Specifying and Prioritizing General Competencies (*continued*)

to impart competencies required for membership in a democratic society and a sustainable way of living’:

- cultural and value competence
- communication competence
- social and citizen competence
- self-management competence
- learning to learn competence
- mathematics, natural sciences and technology competence
- entrepreneurship competence
- digital competence

The core curriculum in Finland includes wide-ranging (transversal) competences comprising knowledge, skills, values and will to be embedded throughout the curriculum. Five competences are specified for preprimary, six for upper secondary, and seven for primary and lower secondary schools:

- thinking and learning-to-learn
- cultural competence, interaction and self-expression
- taking care of oneself and managing daily life
- multi-literacy
- ICT competence
- working life competence and entrepreneurship
- participation, involvement and building a sustainable future

Hong Kong’s curriculum identifies nine generic skills considered to be essential to lifelong learning in the 21st century. These are grouped into three categories (basic skills, thinking skills, personal and social skills). All nine skills are expected to be ‘fully infused in relevant knowledge contexts’ and stages of development are specified for each skill:

- communication skills
- mathematical skills
- IT skills
- critical thinking skills
- creativity
- problem solving skills
- self-management skills
- self-learning skills
- collaboration skills

Korea’s 2015 Revised Curriculum identifies six key competencies that all students are expected to develop to realise the curriculum’s vision for the future Korean citizen. The curriculum specifies that these are to be developed throughout the school curriculum and to be operationalized in subject-specific competencies:

- self-management ability
- ability to process and utilize knowledge and information
- creative thinking ability
- aesthetic emotional capacity
- communication ability
- community capacity

Promoting Social-Emotional Development and Positive Attitudes and Values

All five jurisdictions recognize social and emotional development as important aspects of student learning and growth. The development of social-emotional skills is seen as part of the holistic development of every child and young person, and a responsibility that schools share with families and the community. Social-emotional development is a particular priority in early childhood. In Finland, the early childhood curriculum prioritizes children's social-emotional growth through play. Finnish schools also use screening methods to identify children requiring early support in this area. And as in the other jurisdictions, curricula encourage the development of social and emotional skills throughout the school years, including through extracurricular activities and experiential learning.

In British Columbia, 'Human and social development' is one of three major goals of the school system (the others being 'Intellectual development' and 'Career development'). The Ministry of Education collects data on the achievement of this goal through annual student surveys. Social and emotional learning, mental health and well-being, and social and personal responsibility, are explicitly embedded into the British Columbia curriculum.

In Estonia, projects led by Tallinn and Tartu Universities have developed assessment materials for a range of competencies, including social, emotional, and self-determination competencies. These have been piloted in schools and are provided for use on a voluntary basis.

The curricula in these school systems also make reference to the development of attitudes and, in most systems, values. This intention is generally not accompanied by a list of the attitudes and values that schools are expected to develop, although curricula may make passing reference to desirable attitudes and dispositions such as perseverance, open-mindedness, flexibility, initiative, and a willingness to take calculated risks.

An exception is Hong Kong, which places a particularly high priority on values education and has had a well-developed Moral and Civic Education Curriculum Framework since 2001. Values and attitudes are seen as comprising the affective component of an integrated, three-component school curriculum (cognition, affection, action). Values are defined as principles that underpin students' conduct and decision-making. Attitudes support motivation and cognitive functioning.

In Hong Kong, the number of priority values and attitudes has been increased over time from five to nine, including through the addition of 'law-abidingness' and 'empathy' in 2020 (see Box 4.4). In addition to these prioritized values and attitudes that all teachers are required to incorporate into school-based curricula, there is a list of more than 60 that schools can choose to incorporate, depending on their school context and mission. Each Key Learning Area curriculum also incorporates other, subject-specific, values and attitudes.

Schools are encouraged to address values and attitudes through the teaching of Key Learning Areas; out-of-classroom activities such as service learning; Moral and Civic Education lessons; and through cross-curricular themes, topics and issues such as moral and ethical education, and civic education, Basic Law education, human rights education, national education, anti-drug education, life education, sex education, and education for sustainable development.

The 2020 Task Force on Review of School Curriculum in Hong Kong recommended strengthening Values Education, including by updating the 2008 Moral and Civic Education Curriculum Framework to describe the intended progression of values and attitudes development across the years of school. Following recent unrest, the task force described a need to strengthen students' understanding of the nation, respect for diverse opinions, love for peace, and respect for the rule of law; to highlight the importance of abiding by the law, public interest and the common good as well as the need to

critically evaluate the truthfulness of information and to use IT ethically in circulating and interpreting information’ (Task Force on Review of School Curriculum, 2020, p. 18).

The task force also recommended the preparation of more ‘life events’ exemplars and resource materials to support teachers in ‘developing the universal core values underpinning Chinese morals and culture (for example, care for life, perseverance, resilience, respect for others, empathy, inclusiveness, sense of responsibility, family values, filial piety, benevolence) and handling controversial issues (for example, bullying, teenage pregnancy, gender issues, cybercrime), with the ultimate aim of cultivating positive values and attitudes that cut across and permeate various facets of Values Education’ (Task Force on Review of School Curriculum, 2020, p. 19).

Box 4.4 Promoting Positive Attitudes and Values

Hong Kong identifies nine values and attitudes in its Moral and Civic Education curriculum framework. Schools are encouraged to integrate these values and attitudes into their moral and civic education planning and to address them through Key Learning Areas and extracurricular activities as appropriate:

- perseverance
- respect for others
- responsibility
- national identity
- commitment
- integrity
- care for others
- law-abidingness
- empathy

Creating Opportunities to Develop Competencies and Attributes

These five school systems have committed substantial resources to support schools’ implementation of general competencies. For example, the Finnish National Agency allocated €100 million to local municipalities to support the incorporation of transversal competencies and digital learning in schools’ delivery of the 2014 curriculum. Municipalities also established 2,200 tutor-teacher positions for this purpose.

However, implementation has often been problematic in practice. Rather than being seen as an integral part of the learning of subjects, general competencies have sometimes been interpreted as separate, additional curriculum requirements that compete with, and detract from, disciplinary learning. In some systems (for example, Estonia), this has resulted in occasional divisions between proponents of ‘subject’ learning and proponents of the development of ‘competencies’. In other jurisdictions, including Korea, implementation has been made more difficult by the high priority society accords traditional disciplinary learning and students’ performances on high-stakes examinations.

A general lesson appears to be that the introduction and implementation of general competencies takes time. When competencies were introduced into the Estonian curriculum in 1996, teachers found them difficult to address, and this continued to be the case for at least the first 10 years. In other systems, too, teachers have found general competencies vague and difficult to interpret and teach when first introduced.

Most systems specify that general competencies should be ‘embedded’ into school subjects. Although the term ‘embedded’ is intended to convey that competencies should not sit alongside and be developed separately from subject learning, it also can convey that competencies are external to subjects and need to be imported, rather than being an integral part of subjects themselves. For example, the National

Core Curriculum in Finland calls for transversal competencies to be ‘embedded’ in the teaching of subjects and assessed ‘in conjunction with the subject-specific goals of each subject’ (Ouakrim-Soivio & Kupiainen, p. 78). But some commonly listed competencies—including critical thinking, creative thinking, problem-solving, using technologies, collaborating, and communicating—might more appropriately be conceptualized as part of a subject’s goals.


It is also common in these curricula to list subject-specific competencies in addition to general competencies. In some jurisdictions, these are extra competencies unique to particular subjects. In others, they are subject-specific instantiations of general competencies. For example, British Columbia expects that core competencies will be evident in every area of learning but will ‘manifest themselves uniquely in each discipline’. These subject-specific manifestations of general competencies are referred to as ‘curricular competencies’. Hong Kong does not refer to subject-specific competencies but instead describes and illustrates how general competencies can be developed in each Key Learning Area. The Finnish curriculum provides guidance on which general competencies might be addressed in the competence goals of particular subjects.

All five jurisdictions recognize that the development of general competencies requires changes to traditional teaching and learning activities (see Box 4.5). Although the mastery of factual and procedural knowledge remains central, attempts also are being made to provide contexts for developing broader competencies and personal attributes. In these school systems, curricula have been redesigned to place greater emphasis on practical applications of learning, increased ‘experiential’ learning inside and outside schools, and more use of ‘real-life’ problems and projects as contexts for learning and development.



In Summary

In these jurisdictions, there have been challenges in introducing general competencies into the curriculum and, in particular, in clarifying how they relate to disciplinary learning. All jurisdictions have recognized that the introduction and development of competencies requires time and greater emphasis on practical applications, increased ‘experiential’ learning inside and outside schools, and more use of ‘real-life’ problems and projects as contexts for learning and development.



Box 4.5 Creating Opportunities to Develop Competencies and Attributes

In British Columbia, the 2016–2017 revision of the curriculum proposed more use of inquiry, project-based learning, problem-based learning, self-assessment, research skills, and scientific methods to promote discovery, creativity, and problem-solving. Through greater use of these teaching methods, the intention is that students will be better able to ‘develop curiosity, imagination, and the ability to think alone and collaboratively in groups with others’.

In Estonia, special programs have been introduced to develop entrepreneurial competence and digital competence. Students participating in Estonia’s ‘junior achievement’ program establish student companies that involve planning, resourcing, implementing, and evaluating businesses. These student companies participate in national and European competitions. In 1997, the Estonian Ministry of Education and private computer companies established the Tiger Leap Foundation to expand technology infrastructure and to introduce a computer science curriculum that emphasized skills in programming, problem-solving, and logical thinking. This initiative positioned Estonia as an early leader in the development of digital competencies and in the national development and use of digital technologies.

In Finland, the development of ‘transversal’ competences is promoted in all school subjects. In addition, the curriculum makes provision for interdisciplinary projects as opportunities to apply subject knowledge and to practise and develop transversal competencies. These projects involve ‘studying various real-world phenomena in groups or teams and making sure that through these phenomena, multiple subjects are touched upon’. This intention has been interpreted differently in different Finnish municipalities and schools, with some interpreting ‘phenomenon-based’ education as a new way to organize learning.

In Hong Kong, experiential learning is seen as a way for students to ‘gain knowledge, master skills, and develop positive values and attitudes’, and the only way to develop attributes such as attitudes, interpersonal relations, and a sense of responsibility. Hong Kong provides a range of experiential activities to promote students’ moral, intellectual, physical, social, and aesthetic development. Schools and teachers are required to provide students at all grade levels with access to ‘life-wide learning’, or out-of-classroom learning, with schools choosing from six models, including a ‘curriculum integration’ model, an ‘event-based’ model, and a ‘project-based’ model. The 2020 Task Force on Review of School Curriculum observed that service learning in school and the community (e.g., uniformed groups, volunteer, and/or charity service for non-governmental organisations in or outside Hong Kong) can be more widely promoted to help students build resilience, gain a deeper understanding of their roles in relation to others as well as the related rights and responsibilities, and reflect on how to make a contribution to society (Task Force on Review on School Curriculum 2020, p. 18).

In Korea, the curriculum for primary and secondary schools sets aside 10% to 15% of curriculum time for ‘Creative Experiential Learning’ activities such as autonomous activities, participation in clubs, volunteering, and career exploration. In addition, during one grade of lower secondary school, a ‘free year’ system has been introduced that is free of competitive examinations. During this year, students have opportunities to ‘discover their dreams and talents’ through activities intended to cultivate future core competencies such as creativity, personality, and self-directed learning.

Encouraging More Integrated Learning

A high priority in all these school systems over recent decades has been the introduction of common and inclusive curriculum and schooling arrangements. This has generally meant moving away from different and parallel types of schools (for example, basic and grammar schools; schools based on different languages of instruction; and general and technical lower secondary schools) toward single, comprehensive schools for all students. It has also meant discontinuing the streaming of students into parallel academic tracks (for example, liberal arts and natural sciences tracks in the upper secondary school) and ending the practice of selecting only some students for progression to the next phase of school. The aim has been to provide every student with common foundations followed by personal choice within the same broad curriculum arrangements. A common priority has been to dissolve earlier curriculum dichotomies—especially those based on knowledge-skills and theory-practice distinctions—and to achieve more integrated forms of learning for all students. At the same time, attempts have been made to reduce the siloed nature of school learning by encouraging more joined-up teaching and learning—across disciplines and beyond the school.

Discontinuing the Streaming of Students

Secondary schools in British Columbia traditionally have been comprehensive in scope; students have not been streamed into separate academic and technical schools. However, streaming within secondary schools (typically, Grades 10 to 12) into academic and vocational/technical programs was common through much of the 20th century. In essence, academic programs prepared students for admission to universities, and vocational/technical programs prepared students for the workforce at the completion of Grade 12. By the 1990s, a common curriculum for kindergarten to Grade 9 was in place in the province. Until about 2000, however, many of these schools directed struggling students into unofficial, and less challenging, ‘modified courses’, particularly between Grades 7 and 9 in mathematics and language arts, a practice that has since been eliminated.

Nevertheless, a type of streaming does continue through students’ choices of subjects in the upper secondary school. For example, in Grade 10, students must choose either Mathematics and Pre-Calculus (which opens a wide array of options for postsecondary study) or Workplace Mathematics (which is intended for students planning study in the trades or direct entry to the workforce). Individual college and university programs decide which upper secondary courses satisfy their admission requirements. In addition, there are opportunities for students to earn dual credits for courses that are recognized for both high school and postsecondary qualifications.

The expectation that all students will have access to a common curriculum through their primary and lower secondary years is now well established in these school systems. Estonia has had comprehensive arrangements for all students up to Grade 9 since the Soviet era. Other jurisdictions have sometimes selected students to continue beyond primary school or streamed students into tracks that prepared them for different kinds of occupations and futures. At some stage, each of these jurisdictions made a conscious decision to have all students complete lower secondary school and to study a common core set of subjects to that point.

An obstacle to providing all students with the same, inclusive curriculum has sometimes been the structure of the school system itself. For example, in Finland prior to the 1970s, two different tracks existed corresponding to two types of schools. One track essentially prepared students for the workforce; the other prepared students for professional and leadership positions following upper secondary education. Participation in these parallel systems was strongly correlated with families’ socioeconomic status and rural or urban location. In 1968, legislation was enacted to create common, municipally-run, comprehensive schools for all students in Grades 1 to 9. The comprehensive school (*peruskoulu*) was modelled on similar reforms in Sweden and Norway and was ‘not merely a form of school organisation; it embodied a

philosophy of education as well as a deep set of societal values about what all children need and deserve'¹ (OECD, 2010a, p. 119). During the 1970s, the two types of schools were incorporated into a common system and curriculum for all.

Finland maintains a dual system in its upper secondary school, with an academic track and a vocational track. Both tracks are pathways to university, but students in the vocational track are considered less well prepared and can enter only via an entrance examination.

In Hong Kong before 2001, students graduating from primary school were classified into five bands and allocated to secondary schools based on scores on an academic aptitude test. The education reform in Hong Kong recommended abolishing the aptitude test and reducing banding in an effort to minimize the labelling of students.

A further example of a bifurcated system resulted from Hong Kong's division of lower secondary schools into Chinese medium of instruction schools and English medium of instruction schools. After 1997, all secondary school graduates in Hong Kong were expected to be proficient in writing Chinese and English and to be able to speak confidently in Cantonese, English, and Putonghua (standard spoken modern Chinese). Public lower secondary schools were expected to teach in Chinese. However, there were concerns about students' exposure to English in these schools, and about the labelling of schools as either Chinese or English. In response, from 2010, the policy was changed to remove this bifurcation and to give all schools flexibility and autonomy to decide on the medium of instruction, including the possibility of teaching particular subjects in either Chinese or English. In this way, Hong Kong has provided a common arrangement for all schools and opportunities for all students to be proficient in both Chinese and English.

Another obstacle to providing all students with the same, inclusive curriculum has been the practice of streaming students into different tracks within a comprehensive structure. When comprehensive schools were first introduced in Finland, a decision was made to stream students in key subjects in the lower secondary school. However, it was soon recognized that the lower streams were being chosen disproportionately by boys and students from lower socioeconomic backgrounds. The consequence was that these students were not able to advance to the academic track in upper secondary school. Streaming was discontinued and all students were given access to the same lower secondary curriculum.

In Korea, students in the upper secondary school were required to choose one of two tracks: a liberal arts track or a science track. These tracks played a role in university admissions. However, it was observed that students choosing one track tended to lose interest in, and to have limited understandings of, the other, resulting in 'seriously ill-balanced learning' (Korea Institute for Curriculum and Evaluation, 2016). Policy makers in Korea became concerned that students were not being provided with the broad education the future would require, which included both 'humanistic imagination' and 'scientific creativity', and replaced these parallel streams with a set of common subjects that all students study and a set of optional subjects from which they choose one. The result is a more comprehensive academic curriculum for upper secondary students that includes choice.

In Hong Kong, the education reforms of the early 2000s included the goal of eliminating early specialization or streaming in school curricula. Terms such as 'pre-vocational', 'technical', and 'practical' were removed from school names with the intention that all schools should be comprehensive, and a whole-person, broad, and balanced curriculum was promoted for all stages of schooling. At the upper secondary level, although students are able to choose to pursue personal interests in areas such as the sciences, technical subjects, and the humanities, schools have been encouraged to move away from narrow academic streaming.

A further obstacle to providing all students with the same, inclusive curriculum has been the practice of selecting only some students to proceed to the next phase of school. In Hong Kong, students were selected

¹Pasi Sahlberg interviewed for OECD (2010).

for entry to upper secondary school based on their results on the Hong Kong Certificate of Education Examination at the end of lower secondary school. Only about one third of each cohort achieved the scores required for entry. This examination was removed in 2010 as part of the New Academic Structure. With all students now having access to six years of upper secondary education, the number of students graduating at age 17 is approximately double the number graduating at age 18 under the earlier, selective system. This reform is considered to have changed upper secondary schooling in Hong Kong from an academic, selective system to a more broad-based, equitable, and diversified system to meet the future needs of the economy and society.



In Summary

These five school systems have been deeply committed to the principle that all students should have access to the same ‘inclusive’ school curriculum. They have implemented major reforms in an effort to ensure this, including restructuring their schooling systems to provide a comprehensive education for all students, eliminating the practice of streaming students into different tracks, and abolishing selection mechanisms that limited access to the next phase of school.

Creating Opportunities for Cross-Curricular Learning

Cross-curricular (or interdisciplinary) learning has been promoted by these school systems for at least the past 2 decades and is a particularly high priority in some jurisdictions (see Box 4.6).

The ability to bring together and apply knowledge from different disciplines is seen by these jurisdictions as an increasingly important objective of school education. For example, the 2020 Task Force on Review of School Curriculum in Hong Kong concluded that a key skill for the future was the ability to ‘tackle problems by integrating knowledge from different subject disciplines and working with people possessing different areas of expertise’ (Education Bureau, 2020, p. 36). In common with some other school systems in Asia, Hong Kong promotes learning inside and outside classrooms as the ‘holistic integration of many learning experiences, rather than adding all the academic subjects together in a patchwork fashion’ (Cheng, 2017, p. 14). In Korea, the ability to creatively integrate knowledge from different disciplines (referred to as ‘convergence’ competence) to address important problems is considered essential to that nation’s future as a knowledge- and service-based economy.

Among the strategies jurisdictions have recommended for fostering cross-curricular learning are the identification and use of what school subjects have in common. Common features of subjects may include shared general concepts such as ‘change’ and ‘cause and effect’, as well as general processes and methods such as techniques of investigation and analysis. Some jurisdictions have structured their curricula into broad learning areas, including the arts, natural sciences and technology, and encourage teachers to identify and use what is common within these areas to promote cross-subject learning. For example, Hong Kong specifies that STEM (Science, Technology, Engineering, and Mathematics) is not a separate subject to be taught, or a cocurricular activity, but instead reflects an intention to coordinate learning across a set of related school subjects.

Some jurisdictions encourage or require schools to address major issues or topics as part of the curriculum and to bring multidisciplinary perspectives to those topics. Examples of cross-curricular topics include the environment, sustainable development, and the use of technologies. The Hong Kong curriculum identifies four focus areas (called ‘key tasks’)—moral and civic education, reading to learn, project learning, and information technology for interactive learning—and provides schools with examples of how these focus areas can be used to build connections between and among Key Learning Areas.

Major projects are also used as contexts for integrating and applying learning from different disciplines, as well as contexts for developing and demonstrating general competencies such as critical and creative thinking, collaborating, using technologies, and communicating. Estonia requires lower secondary students to complete a creative project that integrates subject learning or addresses a cross-curricular topic. The project may be a student survey, major project, or creative work, and is required for graduation from lower secondary school (ninth grade).

In Finland, eighth grade students undertake a two-week period of work experience during which they gain a view of working life and have an opportunity to integrate and apply learning. In addition, every Finnish student completes at least one 'multidisciplinary learning module' each year as a context for integrated learning. The module must address a general topic or 'phenomenon', which has led to this approach being dubbed 'phenomenon-based' learning. Many schools in Estonia use 'integration weeks' (or days or months) to apply subject knowledge from different disciplines to broad topics or challenges. Examples of integration weeks are traffic week, nature week, and foreign languages week. In addition, basic (primary to lower secondary) schools in Estonia have considerable flexibility to modify subjects and cross-curricular topics specified in the national curriculum to ensure cross-curricular learning. This includes the possibility of merging subjects and changing amounts of teaching time.

And cross-curricular learning is also promoted through courses and subjects that require or invite the integration of knowledge from different disciplines. Examples include career planning and cultural studies courses. Hong Kong has introduced multidisciplinary subjects as contexts for integrated learning. These include a General Studies course in primary schools and, until recently, a Liberal Studies course in the upper secondary school.

Challenges in implementing cross-curricular learning include achieving an appropriate balance between disciplinary and interdisciplinary learning. A view sometimes expressed is that the school curriculum should no longer be structured around disciplines, but should be structured instead around major issues, themes or topics that teachers and students address, drawing on the disciplines as required. Another view is that the curriculum should be organized around general competencies rather than disciplines. These are not the views of these five jurisdictions, which continue to structure their curricula around disciplines and seek ways to encourage cross-curricular learning within a disciplinary structure.

In Finland, the broad guidelines associated with multidisciplinary learning modules gave schools considerable latitude in deciding how modules would be implemented. In one municipality (the City of Helsinki) some schools chose to timetable learning not around school subjects, but around multidisciplinary modules. This led the Finnish Agency for Education to advise schools that 'multidisciplinary learning modules or phenomenon-based learning do not replace school subjects, but teaching, learning, and assessing are still based on the school subjects defined in the Basic Education Act'. Although multidisciplinary learning modules continue to be interpreted and used in different ways in schools, their use is now more reflective of traditional interpretations of project-based learning.

A challenge in some jurisdictions has been in achieving the level of teacher cooperation and collaboration required by cross-curricular learning. Although teachers have generally been supportive of initiatives to introduce more integrated, less siloed, forms of learning, teaching has traditionally been highly subject-focused. This is especially true of teaching in secondary schools; collaboration tends to have been within subjects or around particular activities such as school events, not around joint projects. Some jurisdictions have made progress in achieving increased cooperation and collaboration across subjects. In other jurisdictions, this remains a challenge.

These jurisdictions vary in the levels of support and guidance available to teachers and schools in implementing cross-curricular learning. Estonian schools often have coordinators to assist in organising cross-curricular activities such as careers events and health promotion events. The Hong Kong curriculum

provides a relatively high level of guidance. In addition, university academics sometimes provide support and resources. For example, a group of academics in Korea have developed ‘a convergence education program that links various subjects, including mathematics, science, and art based on design’ (Lee et al., 2017, p. 173) for primary and lower secondary students, based on the content of the 2015 curriculum. In addition, academics and teachers are encouraged to participate in national and provincial contests to develop cross-curricular teaching activities and materials in STEM, with the outcomes influencing teacher promotion (Lee et al., 2021).

There can also be challenges arising from parents’ expectations. Parents themselves were taught in traditional subject-based ways and are sometimes concerned that cross-curricular activities and projects will lead to reduced rigour and the lowering of educational standards.

In Summary

These curricula place a high priority on students’ abilities to bring together and apply knowledge from different disciplines to address important issues and topics. The five jurisdictions have developed a range of strategies for promoting cross-curricular learning, including major projects, integration weeks, and multidisciplinary courses. Challenges include achieving an appropriate balance of disciplinary and interdisciplinary learning, and providing guidance and support to teachers and schools.

Promoting Breadth in Upper Secondary Learning

As a growing proportion of students have continued their education into upper secondary school, these jurisdictions have addressed the question of how this phase of schooling is best designed to prepare all students for further learning, life, and work. A particular challenge has been to provide students with a broad preparation that includes deep theoretical knowledge and understanding; opportunities for knowledge application; high-level skill development; as well as attitudes, values and dispositions for future employment and ongoing learning.

In some of these jurisdictions this has been a challenge because of a strong societal focus on academic learning, performance on external public examinations, and successful admission to university. In these systems, there has been an emphasis on the acquisition and demonstration of theoretical knowledge, and much less emphasis on practical and applied learning. In fact, vocational learning has often been seen as a second-rate alternative and, sometimes, a dead end. For example, in Hong Kong, less than 10% of students opt for applied learning (ApL) courses (Education Bureau, 2018). In Korea, the percentage of students enrolling in vocational courses has declined from about 50% in the 1980s to 25% as more students have sought entry to university and the opportunities that university qualifications offer. This focus on academic learning is less true in jurisdictions, like Finland, which have strong vocational tracks.

Box 4.6 Creating Opportunities for Cross-Curricular Learning

In British Columbia, a 1988 royal commission proposed a common curriculum for all students in Grades 1 to 10 that included the humanities, fine arts, sciences, and practical arts (physical education, industrial education, home economics, and lifespan education). It also proposed ‘interdisciplinary’ approaches to teaching and interdisciplinary teams of teachers. A 1993 survey of teachers conducted by the British Columbia Teachers Federation found support for this proposed move from discrete disciplines to more integrated learning. However, the implementation of interdisciplinary teaching proved challenging in practice, particularly at the secondary school level. The current British Columbia curriculum is designed to ‘respect the inherent logic and unique nature of the disciplines while supporting interdisciplinary approaches’.

In Estonia, the 2010–2011 curriculum for primary and lower secondary schools made integrated learning a priority. The curriculum anticipated integrated learning being achieved through cross-curricular activities such as projects; the study of cross-curricular topics; interdisciplinary courses such as IT, career, and media; extracurricular courses such as cultural identity; elective courses such as first-aid, career planning, and cultural studies; and periods of thematic teaching (for example, traffic, nature, and foreign languages). Such activities were seen as opportunities for teachers to address and develop cross-curricular competencies. The 2010–2011 curriculum also introduced broad subject fields such as natural sciences, the arts, and technology to enable links to be made and competencies to be developed across related subjects (e.g., inquiry skills in the natural sciences).

In Finland, the National Core Curriculum for Basic Education 2014 introduced ‘multidisciplinary learning modules’ to achieve more integrated learning and dialogue across school subjects. The curriculum required every student to complete one module per year focused on a particular ‘phenomenon’ (such as ‘Oil’ or ‘the Middle Ages’). Multidisciplinary learning modules required students to plan and set goals and teachers to collaborate across two or more subjects. The Finnish Agency for Education clarified that multidisciplinary learning modules did not replace subjects, and that teaching, learning, and assessing were still based on subjects.

In Hong Kong, schools are encouraged, but not required, to adopt a cross-curricular approach when planning whole-school curricula to ‘enable students to explore knowledge and gain experience in a more comprehensive and coherent manner’. Schools are given examples of how this might be done, including through ‘key tasks’ that can be used to make connections across Key Learning Areas (KLAs). Most KLA curricula in Hong Kong also provide advice on possible cross-KLA linkages. The jurisdiction’s curriculum includes a compulsory multidisciplinary General Studies course for primary school students structured around themes such as ‘The Connected World’

Box 4.6 Creating Opportunities for Cross-Curricular Learning (*continued*)

(which incorporates biology, technology, and the social sciences). And, until recently, the curriculum included a compulsory multidisciplinary Liberal Studies course for upper secondary students focused on analyzing, discussing, and debating contemporary issues.

In Korea, to prepare students for the future, the current curriculum places a high priority on cultivating creative and convergent* competencies. The development of students' abilities to integrate learning across disciplines (referred to in Korea as 'convergence education') has been promoted by developing new opportunities throughout the curriculum for cross-curricular teaching and learning. This new emphasis on creativity and cross-curricular learning is seen as part of a shift in focus from the memorization of factual and procedural knowledge to more meaningful learning and competence. However, less than 30% of Korean teachers currently feel prepared to teach cross-curricular skills.

** The US National Science Foundation defines convergence as the deep integration of knowledge, techniques, and expertise from multiple fields to form new and expanded frameworks for addressing scientific and societal challenges and opportunities.*

The achievement of breadth in upper secondary schooling also can be a challenge because of a structural bifurcation that requires students at the end of lower secondary school to choose between a general/academic track focused largely on the acquisition of theory and knowledge, and a vocational track focused largely on the mastery and application of skills. Students choosing an academic track may have fewer opportunities to apply their learning to practice or to develop skills in knowledge application than students in a vocational track. On the other hand, students choosing a vocational track may focus on mastering skills to the exclusion of developing theoretical understandings. It is also common for academic and vocational tracks to be based on different pedagogical approaches and different methods for assessing and recognising learning.

These five jurisdictions have addressed these challenges in different ways. One jurisdiction—British Columbia—has chosen not to stream students into separate academic and vocational schools. Although students were once streamed into three within-school tracks, from the 1980s, British Columbia extended its comprehensive model to the upper secondary school in an effort to ensure that all students are exposed to both academic and practical learning to prepare them for any career. As a result, most preparation for specific vocations is delayed until after secondary school. All upper secondary students take general career-life education courses and some take electives that include the possibility of earning credit toward industry credentials. In these ways, British Columbia has sought to create a broad upper secondary curriculum that integrates knowledge and skill development.

Estonia faces the challenge that parents and teachers have a strong preference for academic learning in the upper secondary school. Vocational studies are widely considered to be for low-performing students. Significant investments have been made over the past 20 years to increase enrolments in VET studies, without success. There are concerns about the quality of general education being received by students who choose vocational studies, and concerns that some students are being prepared too narrowly for jobs that may not exist in the future. Consideration is being given to the model Sweden has adopted—a

common upper secondary school within which students are able to choose their programs of study. The challenge in Estonia would be in bringing together and integrating two very different types of schools. At the same time, consideration is being given to learning outcomes that should apply to all students regardless of their program of study.

Hong Kong is also a society that values academic excellence and tends to see vocational education and training as a fall-back option for low-achieving students. In the eyes of most parents and students, the single path to success is through the study of academic subjects and high performance on public examinations. The government has worked to change this perception, including through state-of-the-art vocational facilities and opportunities for overseas experiences. Vocational education also is being broadened to give more priority to general vocationally relevant skills and attributes, and less priority to narrow job-specific skills. In an effort to broaden student learning beyond academic learning, Hong Kong has introduced 2-year elective Applied Learning courses that develop both theory and practice in various vocational and professional fields. The 2020 school curriculum task force recommended increasing the number of these courses, which currently are studied by about nine percent of students. However, for the vast majority of Hong Kong students, the focus of upper secondary learning continues to be on the acquisition of disciplinary knowledge and understanding that can be demonstrated in examinations.

As Korea industrialized last century, vocational education and training provided the skilled labor required by its emerging industries. In the 1970s and 1980s, about half of all upper secondary students were enrolled in general secondary schools, and half in vocational secondary schools. With changes in the economy and Korean society, a growing proportion of students sought places in higher education made possible by academic study at school. This resulted in a decline in the popularity of vocational study, which tended to be a destination for less academically able students. The government's introduction of 'Meister' schools to prepare highly-skilled workers for priority industries arrested the decline in the popularity of vocational study, but for the majority of Korean students, upper secondary education remains strongly focused on preparation for examinations in academic subjects.

In contrast, Finland has succeeded in developing generally well-regarded upper secondary tracks for both academic and vocational learning. Almost the entire age cohort participates in this phase of school, with about 55% attending an academic upper secondary school, and about 45% a vocational upper secondary school. The vocational option increased in popularity in the early 2000s, in part because Finland created polytechnic colleges (now universities of applied sciences), providing vocational students with a pathway to tertiary study, including university study. About 25% of coursework in the vocational track is based on core academic subjects taken by all upper secondary students, and both academic and vocational students can take a common national matriculation examination. Although there is strong support in Finland for the division of upper secondary education into these parallel tracks, cooperation between academic and vocational schools is being encouraged to enable students in one track to enrol in studies from the other. This has led to some people questioning whether these tracks might one day be converged, with the concept of the Finnish comprehensive school being extended to upper secondary education. However, there is currently limited support for this² (OECD, 2010a).

² Jukka Sarjala interviewed for OECD (2010a).



In Summary

A challenge these jurisdictions are addressing is to ensure all students in the upper secondary school receive a broad education that integrates knowledge, understandings, skills and attributes for further learning, life, and work. Some systems are working to specify core learning outcomes for all students in this phase of school. Working against this objective in some systems is the high value attached to ‘academic’ learning by parents, students, and teachers, to the exclusion of knowledge application and skill development, and the low status of vocational learning, especially when it is focused on narrow job-specific skills and does not provide pathways to postsecondary institutions. Efforts are being made across these jurisdictions to build connections between parallel tracks and schools and to ensure every student has access to quality tertiary education.

Increasing Opportunities for Local Adaptation

A long-term trend in all these jurisdictions has been toward greater local decision-making in relation to the school curriculum. This has usually coincided with a more general move to local management, with local authorities having greater control over a range of matters, including staffing and school budgets. Decentralized curriculum decision-making has given regional authorities, schools, and teachers more flexibility to tailor teaching and learning to students’ local needs and circumstances. The extent of devolution and ongoing levels of central prescription and control vary across these systems. Most have faced an ongoing challenge in achieving a balance between common curriculum expectations on one hand, and local autonomy to respond to students’ contexts and needs on the other.

Decentralizing Curriculum Decision-Making

Historically, curriculum development in these jurisdictions was highly centralized. Curricula usually were developed by civil servants working in curriculum branches of ministries of education or other national agencies. They were detailed and prescriptive, often including time allocations. Textbooks, too, were developed or authorized centrally, along with curriculum guides and other teaching and learning resources.

Over the past half century, these school systems have changed their curriculum development processes to give schools, and sometimes local education authorities, greater input into what teachers teach and students are expected to learn. This has often been part of a general move to more ‘democratic’ decision-making and the belief that central authorities should devolve all decisions best made at the local level (the subsidiarity principle). It has also reflected an intention to recognize the professional role of teachers in adapting what is taught to students’ interests, needs and local circumstances to make learning more relevant and meaningful.

The consequence has been that centrally developed curricula tend to have become general ‘frameworks’ rather than detailed curriculum specifications or syllabi. Local authorities, schools, and teachers generally have been given considerable latitude to interpret these frameworks and to develop local curricula within broad parameters. For example, the Finnish national curriculum requires municipalities or schools to specify whether teaching will be by grade level or in multi-grade classrooms (although multi-grade classrooms are rare); whether students will progress from grade to grade or by milestones on their personal learning plans (which also are rare and mainly for students who require special support); and whether teaching will be subject-based or interdisciplinary. Earlier processes such as central textbook approvals and school inspections also have been discontinued.

However, the degree of flexibility teachers have to adapt central curricula to local contexts appears to vary across these jurisdictions. Curriculum development can be a hierarchical process in which the central curriculum is reinterpreted at a regional or municipal level and then provided to teachers to operationalize by developing goals, learning content, teaching methods, learning activities, and assessment methods. Although each step in this process is responsive to local circumstances and student needs, it may not provide the flexibility experienced by teachers in some other jurisdictions.

There is an explicit expectation in some jurisdictions that the development of school-level curricula will be a collaborative process, sometimes involving the whole school community. This is the case in Estonia, where the principal is responsible for leading the school's development of the curriculum, a process that includes teachers, students, support staff, parents, and other interest groups in the local community. Hong Kong describes the 'whole-school curriculum planning' process that all schools must undertake, including required features of every school's curriculum. In Hong Kong primary schools, a designated position, the primary school curriculum leader, is responsible for leading this process. In other systems, including Finland, teachers are expected to work collaboratively to develop the school's curriculum, provided that the school curriculum addresses everything within the national core curriculum.

Ultimately, classroom teachers are responsible for interpreting and delivering the curriculum. In some jurisdictions, teachers have considerable professional discretion and independence in doing this. For example, teachers in Estonia are used to being able to choose what and how they teach, including integrating subjects if that is the choice of teachers and the school. They are used to working independently to create their own educational resources, such as digital learning assets, and sharing these online with colleagues. Teachers in these jurisdictions also now have control over the textbooks they use. For example, teachers in Finland make considerable use of textbooks and workbooks, which they select from a competitive textbook market consisting of high-quality materials. However, to meet its objective of better addressing students' circumstances and needs, local curriculum decision-making involves much more than choosing textbooks.



In Summary

A general trend in these jurisdictions has been from centrally developed, prescriptive curricula and syllabi to broader curriculum 'frameworks' within which schools, and sometimes local education authorities, are expected to develop curricula responsive to students' circumstances and needs. At the school level, the curriculum development process may include teachers, students, parents, and the broader community. The jurisdiction may provide guidelines for whole-school curriculum development.

Balancing Prescription and Autonomy

Although there has been a general trend over time to decentralize curriculum development, this has not been a consistent trend in every jurisdiction (see Box 4.7). In some jurisdictions, decentralization has been followed by recentralization, sometimes more than once. This has occurred as a result of changes in governments and their policy priorities; in response to observations in national and/or international assessment programs that devolved decision making has resulted in unacceptable differences in performances across schools; and when governments have perceived a need for greater intervention and reform of the curriculum to address new jurisdictional challenges and priorities.

For example, the 1994 national core curriculum in Finland was considered to have resulted in substantial differences in local interpretations. This was accompanied by evidence of declining performances in both national examinations and international surveys. Data from the Trends in International Mathematics and

Science Study (TIMSS) showed a significant decline in 8th Grade mathematics from the 1990s. And the OECD's Programme for International Student Assessment (PISA) showed a decline in the performance of Finnish students from 2000.

In response, the 2004 Finnish core curriculum adopted a more centralized approach that included the introduction of national criteria for assessing student performance. At the same time, there was a perceived need to restructure the curriculum to better reflect evolving understandings of knowledge and learning, and to ensure a nationwide focus on higher-order cognitive skills in the curriculum. The result was a higher degree of curriculum specification; the 2014 national core curriculum consisted of 500 pages, a significant increase on the 100-page 1994 curriculum.

British Columbia has seen the curriculum decentralized and recentralized several times. Historically, the school curriculum was centrally developed by the ministry. In 1972, a decision was made to create a more democratic school system, including by giving schools and school districts greater control over the curriculum. A new curriculum provided schools with a broad set of goals and learning outcomes spanning multiple grades, and schools were expected to develop coherent grade-by-grade learning sequences to address these (an approach similar to that used in Finland for grade spans 1–2, 3–6 and 7–9).

It was soon recognized that further guidance was required. Teachers, and particularly new teachers and those teaching out of field, sought details beyond broad learning outcomes. As a result, curriculum development was recentralized and in 1975, a new 'core curriculum' was developed that provided greater clarity about what teachers were to teach and students were to learn for each subject and grade. Subsequent curriculum guides were informed by the core curriculum, and in some cases, resource books were issued to provide guidance on how learning could be organized, and approved textbooks and resources could be used in classrooms.

By the 1980s, provincial curriculum was detailed and contained in more than 30 documents that provided sequencing, assessment, and learning resources for most subjects and grades. Most significantly, pressure was being directed from sources outside the school system to add new courses and topics in the curriculum, but there was public and professional reluctance to delete any topics or courses. The result was what the 1988 royal commission described as 'a smorgasbord curriculum' lacking coherence and structure, and schools suffering from 'curriculum overload' (Sullivan, 1988).

The royal commission proposed far-reaching changes, including development of a common curriculum for Grades K to 10. It also proposed the use of developmental criteria rather than chronological age in the placement of children entering school and the introduction of ungraded primary divisions in the first four years of school (K–3). The resulting curriculum, issued in 1990, was designed to support the development of children aesthetically, socially, emotionally, intellectually, and physically. It enjoyed the support of teachers, especially K–3 teachers.

However, changes introduced in 1989 and the early 1990s—such as the introduction of dual entry dates for Kindergarten and the introduction of ungraded structures—led to concerns by many parents that changes were introduced too rapidly and lacked clear information about the learning standards expected of children in schools, especially in the development of basic skills (British Columbia Ministry of Education, 1993). The government responded by introducing the 1994 Education Plan that included a new curriculum for the province known as Integrated Resource Packages (IRPs). And, in 1999, in response to continued demands from parents, the government introduced the Foundation Skills Assessment (FSA) at Grades 4, 7 and 10 to report individual test results in reading, writing, and numeracy to parents.

The new IRP curriculum, responding to earlier concerns expressed by the royal commission, adopted a common format across subject areas and included, in the same binder, prescribed learning outcomes, suggestions for instruction, assessment ideas, and Ministry-recommended resources, for each subject and

grade. Response at the secondary level, where teachers specialize in subject areas, was generally supportive of the new curriculum structure. However, teachers at Grades K to 7, who typically taught most, or all, subject areas, had to work with multiple subject-based binders, and many felt overwhelmed. Adding to the workload, teachers across the grade levels interpreted achievement indicators, introduced in the early 2000s, as required activities. As a result, implementing the IRPs presented significant, if not impossible, challenges for many teachers. Over time, the curriculum in the 1990s and early 2000s was regularly described as an overcrowded checklist of outcomes to be covered.

By 2010, the government questioned how well this curriculum was preparing students for life and work in the 21st century. The 2011 British Columbia Education Plan proposed the replacement of the detailed, content driven curriculum with a more streamlined curriculum that would provide a greater emphasis on self-reliance, critical and creative thinking, problem-solving, innovation, teamwork, cross-cultural understandings, and technological literacies. There would be less focus on specific facts and more attention to concepts and competencies, with students having more opportunities for discovery, creativity, and problem-solving. Teachers were closely involved in the development of this new curriculum, which was fully redeveloped by 2019.

However, there are some concerns in British Columbia that this curriculum leaves too much to the discretion of individual teachers, that the curriculum's 'big ideas' are too open to interpretation, that it erodes disciplinary knowledge, and that it lacks the supporting resources that teachers require (C. Ungerleider, personal communication, 29 January and 21 July, 2020). There are also reported parent concerns that the curriculum no longer focuses on outcomes, and that standards will decline without more central prescription of what teachers should teach (Learning First, 2018).

In Summary

The general trend toward decentralized curriculum development has not been a consistent trend in every jurisdiction. In some jurisdictions, decentralization has been followed by recentralization in response to changes in government policy, concerns about declining performances or unclear standards, and attempts to address a broader range of learning outcomes and better prepare all students for future life and work. These jurisdictions have made ongoing, and sometimes oscillating, efforts to balance central prescription with local autonomy.

Box 4.7 Balancing Prescription and Autonomy

In the early 1970s, British Columbia gave schools and school districts greater control over the curriculum by specifying only broad goals spanning multiple grades. However, concerns that schools lacked clear direction resulted in a more detailed core curriculum being introduced in 1975. This general process has been repeated twice since that time, with each attempt to broaden learning outcomes or provide a more flexible, streamlined curriculum resulting in concerns about unclear standards and/or inadequate direction for teachers. The current curriculum was developed in close collaboration with teachers and in response to concerns about the overly detailed previous curriculum based on Integrated Resource Packages. Although the curriculum appears well-accepted by teachers, there are some concerns that it is insufficiently prescriptive of what teachers should teach.

Estonia's 1996 curriculum was inspired in part by the Finnish curriculum. Earlier curricula during the Soviet period had been highly prescriptive. Schools now develop their own curricula based on the national curriculum framework to address students' interests, needs, and regional and cultural differences. Formal curriculum and reporting requirements have decreased and nationally provided materials have become largely indicative. Principals are responsible for curriculum development and all staff, students, and parents have opportunities for input. Teachers have considerable freedom to make decisions within the curriculum and have a history of developing and sharing teaching resources.

In Finland, the first national curriculum in 1970 was strongly centralized. Over the following decades, the degree of curriculum specification fluctuated. Today, each municipality is responsible for developing the school curriculum within the national framework, but some municipalities authorize schools to develop their own curricula, provided that everything in the national core curriculum is covered. In some schools, curriculum development is a collaborative activity, but in smaller schools, may be the responsibility of each teacher. State-approved textbooks were used to support the introduction of comprehensive schooling in the 1970s but were discontinued in the early 1990s. Teachers have autonomy to select their own textbooks, which continue to play a significant role in directing student learning.

In Hong Kong, the introduction of school-based management in the early 1990s gave schools greater responsibility for curriculum development within the expectations of the jurisdiction-level framework. Guidelines for 'whole-school curriculum planning' recommend collaborative curriculum development involving staff across the school and specify requirements for the inclusion of Key Learning Areas, allocating teaching time, setting learning objectives, addressing general competencies, values and attitudes, and ensuring access to essential learning experiences. Primary schools have a designated curriculum leader responsible for this process. Schools are expected to develop a plan for a broad and balanced curriculum appropriate to students' needs and the school context.

Box 4.7 Balancing Prescription and Autonomy (*continued*)

Korea's national curriculum historically was developed and operated centrally. The decentralization of curriculum decisions was a key reform of the sixth curriculum revision in the early 1990s. Subsequent curriculum revisions have given greater autonomy to regional education offices and schools to adapt the national curriculum to local circumstances, as long as they meet the achievement standards specified by the curriculum. The development of the Korean curriculum thus occurs at three levels: the national framework; regional interpretations and adaptations to address local needs and conditions; and a school-level 'teacher curriculum' that defines goals, content, learning activities, and assessment methods.

Providing Greater Flexibility to Meet Individual Needs

An intention of recent curriculum reforms in these five jurisdictions has been to make schooling more 'student-centered', 'learner-centered', or 'child-centered'. The underlying objective has been to make schooling less about teachers delivering the same curriculum content to everybody (sometimes referred to as teacher-centric) and more about understanding and addressing the interests, motivations, aspirations, and learning needs of individual learners and creating flexible curriculum arrangements that allow students more choice in what, when and where they learn. From the point of view of curriculum design, key considerations are the accommodation of greater student agency or choice, and the creation of flexibility for students to learn anywhere at any time, including the possibility of progressing at their own pace. All these jurisdictions have been revising their curricula to support more flexible learning.

Providing Flexibility in What Students Learn

There are two general reasons for providing more student choice in the school curriculum. The first relates to intrinsic motivation. These jurisdictions have concluded that students are more likely to be emotionally engaged in learning if what they learn has personal meaning and relevance. Curiosity and wonder are powerful motivators, and it has been recognized that students are more likely to be engaged and to learn successfully if they have opportunities to pursue issues and topics that interest them. The second reason is to accommodate differences in students' emerging post-school aspirations. During their secondary school years, students develop clearer understandings of personal strengths and interests and of the kinds of post-school activities they may wish to pursue. Over recent years, these five systems have introduced more flexible curriculum arrangements that allow upper secondary students to design their own learning programs to pursue personal strengths, interests, and post-school goals.

The intention to provide students with more choice in what they learn is usually linked to the concept of 'personalized' learning. For example, the 2011 British Columbia Education Plan called for personalized learning for each student to cater for differences in students' interests, needs, and aspirations, while maintaining high expectations for what all students should know and be able to do. Reforms to the Hong Kong curriculum over recent decades—including the activity approach for primary schools in 1982, school-based curriculum development in 1988, the target-oriented curriculum of 1995, and the 2002 Learning to Learn reforms—have all sought to introduce more student-centered learning to cater for diversity. The 2020 task force reviewing school curriculum in Hong Kong noted increasing community awareness of the need for this.

The promotion of self-directed learning, including through opportunities for students to have more input into what they learn, to propose issues and topics for investigation, to set personal learning goals, and to monitor and evaluate their own progress, is seen in these jurisdictions as a way of building emotional engagement in learning. For example, British Columbia’s current curriculum argues that ‘questions generated by both students and teachers are critical to encouraging a sense of wonder and curiosity among students’ (British Columbia Ministry of Education, 2015, p. 6). The 2004 Finnish core curriculum states, ‘The objective is to increase pupils’ curiosity and motivation to learn, and to promote their activeness, self-direction, and creativity by offering interesting challenges and problems. The learning environment must guide pupils in setting their own objectives and evaluating their own actions.’

Increases in self-directed learning introduce changed roles for teachers. The 1985 Finnish national core curriculum envisaged teachers actively creating learning opportunities and personalized learning plans for all students. More recently, the 2011 British Columbia Education Plan envisaged the focus of teaching changing to be less about imparting or mediating knowledge, and more about empowering and guiding learners (Magnusson & Frank, 2015). The current Estonian curriculum (2021–2035) refers to the empowering and guiding of learners as the ‘modern learning approach’. These jurisdictions recognize that teaching of this kind is different from, and can be more demanding than, delivering common curriculum content to all students. Some jurisdictions—for example, Estonia—have provided in-service professional learning to support teachers in curriculum development to deliver more self-directed learning.

Korea’s national curriculum includes an emphasis on the development of a ‘self-directed person’ and prioritizes student independence, self-regulation, and self-management. In 2016, a ‘free semester’ program was introduced for middle school students to provide ‘a variety of activity programs to enhance students’ talents and aptitudes with student-centered learning and process-oriented evaluation’ (Korean Ministry of Education, 2019, p. 45). Under this program, students are given opportunities to ‘discover their dreams and talents’ (p. 45) by designing their own programs of study and engaging in hands-on activities that include career exploration. From 2018, schools were able to offer this program for two semesters.

Levels of curriculum flexibility and choice usually increase significantly in the upper secondary school where students are able to select from a range of course offerings. In Hong Kong, students choose from a number of upper secondary electives according to their interests and abilities. In the past, students tended to be streamed into arts, science, commercial and technical tracks, but are now encouraged to choose electives from different Key Learning Areas. When these new arrangements were introduced in 2012, the total number of students studying science subjects was greater than the number under earlier streamed arrangements. In Korea, students also choose from an extensive list of elective subjects in addition to a set of common courses. A ‘high school credit system’ has been introduced to encourage even wider choice by basing graduation on a required number of course credits. In these and other ways, students are being provided with greater curriculum flexibility and choice in the later years of school. Similarly, students in the general upper secondary program in Finland design their own programs of study. These are not based on year levels and include mandatory subjects as well as subjects not included in matriculation examinations (such as arts, music, and international trade). There has been increasing discussion of how credit on these subjects could be used for entrance to higher education institutions. However, a concern in some systems is that increased student choice may disadvantage some students, especially students from disadvantaged backgrounds. There is some evidence to support this concern. In British Columbia, although Indigenous students are graduating at higher rates than in the past, they are also more inclined to choose courses that limit their post-school options. And in Finland, there is some evidence that students with more choice in what they learn (referred to as ‘student-oriented teaching practices’) perform at lower levels in mathematics in the OECD’s Programme for International Student Assessment (Saarinen et al., 2020).



In Summary

An intention of recent curriculum reforms has been to make schooling more personalized or ‘student-centered’. One aspect of this intention has been to provide students with greater agency or choice in their learning. Reasons for doing this have been to promote emotional engagement and intrinsic motivation (while not ignoring the continuing importance of extrinsically motivated learning), including by assisting students to see the meaning and relevance of what they learn, and also to accommodate differences in students’ emerging strengths, interests, and post-school aspirations in the later years of school. The intention of more self-directed learning has implications for how the curriculum is organized and teachers are prepared and supported.

Providing Flexibility in When and Where Students Learn

As well as giving students more choice in what they learn, these jurisdictions have introduced more flexibility in when and where learning occurs. Every jurisdiction was confronted with this challenge when schools were closed and learning was moved online in 2020–2021 because of the pandemic, but most of these jurisdictions had already been embracing a broader view of learning that incorporated out-of-hours and out-of-school learning. And while most curricula were designed for delivery into formal school settings—including classrooms, grade levels, and school timetables—online and other forms of flexible delivery introduced less structured, more individualized, and less time-bound forms of learning.

Some jurisdictions have described this development as a shift in focus from formal education to learning. For example, Hong Kong has begun referring to ‘learning time’ rather than ‘lesson time’ to promote understanding that learning can occur anywhere, anytime, not only during formal lessons. The 2020 task force in Hong Kong noted that most schools continue to rely on the school timetable and central curriculum guidelines to allocate time to learning but recommended the wider adoption of the concept of learning time given the ‘changing modes of learning beyond the classroom and school hours (for example, e-learning), the growing diversity in student learning needs, and variations in school contexts’ (Task Force on Review of School Curriculum, 2020, p. 14).

The COVID-19 pandemic brought forward thinking in these jurisdictions about flexible contexts for learning, self-directed learning, and teaching practices to support such learning. Most jurisdictions were already addressing these issues. For example, Finland was making increasing use of digital platforms to support student learning, as well as open learning environments that offered possibilities for more differentiated teaching and learning (Ouakrim-Soivio & Kupiainen). Many schools in British Columbia were exploring learning environments that made more creative use of time and space to better meet individuals’ interests and learning needs. Hong Kong was promoting the use of ‘life-wide’ (out-of-classroom/extracurricular) learning, including through the government’s life-wide learning grants to promote more experiential learning through activities such as excursions, field trips, visits, and student exchanges with mainland China and other countries. And in Estonia, significant learning was occurring through hobby schools, nature clubs, science and environmental education centers, museums, and collaborations between schools and non-government organizations and technology companies.

During school closures between 2020 and 2021, teachers in all jurisdictions found new ways to blend information technology into their teaching and to make better use of digital learning environments. With students learning from home, they were often able to provide online learning activities and materials better matched to individuals’ current levels of attainment and learning needs—to the benefit of students requiring more support and closer monitoring, as well as those ready for more challenging learning

experiences. For some students, technology-supported learning provided opportunities for more ‘personalized’, self-paced, and self-directed learning.

Another reason for introducing more flexible learning arrangements has been to better address variability in individuals’ learning needs. These jurisdictions have recognized that students have widely varying levels of attainment, interests, and learning needs, and are shifting the focus of curriculum delivery from groups to individuals. The Ministry in British Columbia has observed that a focus on personalization means recognizing and addressing students’ different needs and interests through more flexible curriculum arrangements. In general, this depends on understanding the circumstances and needs of individual learners—through more informative assessments and possibly with the aid of learning analytics tools—in an effort to ensure that every learner’s needs are met.

Greater flexibility in when and where students learn also introduces the possibility of individuals progressing at their own rate. For example, in Finland, there is no grade structure in the general upper secondary school. Instead, students progress at their own rate through a modular curriculum structure that includes mandatory courses (100 of 150 credits) and are expected to take a degree of responsibility for designing their own learning programs.

In some of these jurisdictions, a shift in focus from education to learning has been accompanied by a view of learning as a continuous, ongoing process not constrained by institutional structures. Learning is seen as life-wide and lifelong. This has led to a stronger focus on the continuity and progression of learning—for example, through greater attention to the coherence and seamlessness of learning across different levels of schooling, and efforts to establish where individuals are in their long-term progress regardless of age or grade level. This focus on continuous progress rather than prescribed curriculum scope and sequence was a proposal of British Columbia’s 1988 royal commission. In Estonia, the concept of continuity of learning independent of formal structures is reflected in that country’s education strategies that aim to provide all citizens with opportunities for further learning tailored to their needs and capabilities throughout the lifespan. Another example is Finland’s intention that there should be ‘no dead-ends’ to student learning.



In Summary

These jurisdictions have introduced greater flexibility in when and where students learn. Online and other forms of flexible delivery have enabled less structured, more individualized, and less time-bound forms of learning. During school closures, teachers found new ways to blend information technology into their teaching and to make better use of digital learning environments. In general, more flexible learning arrangements have enabled teachers to better address individual learning needs, and students to have more say in their own learning paths and to advance at their own pace.

Building a World-Class Curriculum

This chapter has considered features of the school curriculum in these five high-performing jurisdictions. Over time, these jurisdictions have developed their curricula in similar directions with largely similar objectives. Often their curricula are underpinned by common principles consistent with research into effective ways to support learning. But there are also important differences in the approaches these jurisdictions have taken, including the degree to which they centrally specify what is to be taught and learnt, and their approaches to incorporating and promoting general competencies and student attributes. Each curriculum has been shaped by a variety of local influences, has evolved over time, and is continuing to evolve. However, considered together, and with an eye to underlying principles, changing global expectations of schools, and accumulating insights from learning research, the study of these five curricula suggests directions for building a world-class curriculum.

The observations in this chapter suggest that a world-class curriculum would be structured around traditional disciplines such as national language and literature, mathematics, science, and the social sciences. Although proposals are sometimes advanced for abandoning this traditional structure and restructuring the curriculum in other ways (for example, around general competencies), these jurisdictions have maintained a strong focus on disciplinary learning. However, within this structure, a world-class curriculum would give high priority to developing students' deep understandings of essential disciplinary concepts, principles, and methods. These may be relatively few in number. They provide the core disciplinary structure around which factual and procedural knowledge are organized. Across the world, many school curricula are not structured in this way. They often have flat structures in which the curriculum is presented as many individual, sometimes unrelated, facts and routines that students are expected to memorize and reproduce—sometimes referred to as 'instructional objectives' or 'outcomes'. Over time, the number of these facts and routines often increases, resulting in overcrowded curricula, time pressure to cover centrally specified content, and relatively superficial learning. In a world-class curriculum, mastery of factual and procedural knowledge would be recognized as essential to deep learning in a discipline but would be developed in a context in which conceptual understanding was prioritized over rote memorization.

A world-class curriculum would provide opportunities for students to develop deeper conceptual understandings through opportunities to transfer and apply their learning to a variety of meaningful, often real-world, contexts. Class time for applications of this kind would be created by reducing the overall amount of content students are expected to learn. The curriculum would focus less on providing extensive subject knowledge, and more on ensuring important conceptual understandings and the ability to apply that knowledge. This, in turn, would require more emphasis in the curriculum on student thinking. The application of disciplinary knowledge to solve problems invariably depends on critical thinking and analysis, as well as creative thinking and synthesis. And complex challenges and problems also often require collaboration, effective communication, proficiency in using appropriate technologies, and the ability to draw on and apply knowledge and skills from a range of disciplines.

Although skills in applying knowledge—commonly referred to as 'transversal skills', 'general capabilities', or '21st century skills'—are sometimes presented as stand-alone competencies to be developed and assessed separately from, or perhaps 'embedded' in, school subjects, in a world-class curriculum, these would be conceptualized as an integral part of a discipline. Growing proficiency in the discipline would be understood as including growing abilities to think critically and creatively, to solve problems, apply technologies, collaborate, and communicate about the content of the discipline, and these would be developed and assessed as part of school subjects.

Opportunities for students to transfer and apply their learning to meaningful contexts and problems also have the potential to build student motivation and engagement, and to help students appreciate the relevance and meaning of what they are learning. In a world-class curriculum, intrinsic motivators, such

as curiosity and wonder, rather than solely extrinsic motivators, such as high-stakes tests and examinations, would be drivers of student learning. In turn, improved motivation and engagement would impact positively on students' enjoyment of learning and general well-being.

The observations in this chapter also suggest that a world-class curriculum would be designed to support teachers to provide learning opportunities appropriate to students' backgrounds, starting points, and learning needs. This requires a level of curriculum flexibility to enable adaptation to local circumstances and to address the needs of individual learners, and includes the possibility of students themselves having some control over what and when they learn. These five jurisdictions generally refer to these intentions—which have implications for how the curriculum is structured—as 'student-centered' learning.

Historically, school curricula have often streamed students into different tracks based on their perceived abilities. Within these tracks, the tendency has been to provide all students with identical learning experiences in the belief that equal treatment would be fair to everybody. It has been common to deliver the same content to all students at the same time, to give students the same amount of time to master this content, and then to assess and grade each student's performance on what has been taught. But over time, many school systems around the world have minimized streaming and introduced more comprehensive arrangements under which all students study the same curriculum (although streaming in the upper secondary school continues in four of these five jurisdictions). Under comprehensive arrangements, too, it is sometimes assumed that fairness depends on treating all students equally.

However, practice in these jurisdictions suggests that a world-class curriculum would recognize a distinction between equality and equity. The school curriculum would be inclusive of all students. It would expect every student to make excellent ongoing progress and eventually achieve the same high standards, but it would also facilitate adaptation to individuals' varying cultural and language backgrounds, interests, current levels of attainment, and educational needs. It would be based on an understanding that fairness depends on every learner's circumstances being understood and every learner's needs being met, and an appreciation that this often requires differentiated treatments. And the curriculum would adopt a flexible approach to time, considering it more important that every student reaches the same high standards than that they all progress in lockstep.

To achieve these intentions, a world-class curriculum would be designed to support teachers to establish the points individuals had reached in their learning to enable them to provide well-targeted teaching and stretch challenges to promote further learning. It would take the form of a map of long-term learning progress, describing and illustrating the progression of increasingly sophisticated knowledge, deeper understanding, and higher levels of skill in an area of learning across multiple years of school. Curricula of this kind would reflect an understanding of learning as a potentially continuous, lifelong process that often occurs on different timelines and in different settings, both inside and outside schools.

Questions for Reflection and / or Provocation

- ✓ How has the curriculum in the area in which you work changed (or how does it need to change) in response to a rapidly changing world?
- ✓ How have you achieved curricular balance between learning disciplinary content knowledge and cultivating 21st Century skills?
- ✓ How well does the curriculum in your context prepare students for the future they will live in? At what level does that start? Early childhood? Primary? Secondary?
- ✓ When reflecting on Hong Kong's decision to move away from traditional subjects with defined learning outcomes to key learning areas with big ideas and learning intentions, how might that shift the learning climate in your context? How might that shift outcomes and trajectories for your learners?
- ✓ Four of the five jurisdictions organize their curriculum around grade spans rather than traditional grade levels. How might organizing in this way shift the learning climate in your context? How might that shift outcomes and trajectories for your learners?
- ✓ When reflecting on how Korea's curriculum links learning content between subjects to enable an understanding of the 'big picture', how is this accomplished in your curriculum?
- ✓ All five jurisdictions are challenged by integrating the application of learning in their curriculum and assessing student competency growth. What steps have been taken to deepen your own understanding of this and how to measure it?
- ✓ Four of the five jurisdictions studied have separate pathways for vocational preparation and a more traditional academic pathway. How does your curriculum prepare young people for varying pathways after secondary school? Are there things that could be optimized to better prepare them to live in a rapidly changing world with emerging technologies and more non-traditional careers?
- ✓ All of these jurisdictions have decentralized curriculum decision-making, giving teachers more flexibility to adapt learning to local contexts and individual needs. What is the current curriculum decision-making model in your context? What changes to that model could potentially improve teaching and learning?

5

Informative Assessment Processes



Chapter Key Themes

- The purpose of assessment is to understand where students are on their learning trajectory, not merely to determine whether they have or have not learned specific content.
- Priority is given to assessments that provide information that can inform action to help students rather than to grade or judge them.
- Assessment is based on evidence of not only the knowledge and skills specified in the curriculum but also students' abilities to transfer and apply concepts, principles and methods; reason and communicate about the content of the learning area; think critically and problem solve creatively; and use technology appropriately.
- Different assessments provide information for different audiences. But underlying all of them is a common understanding of what is to be learned, how it is to be sequenced and the competencies and attributes to be developed over time. Assessments reflect an understanding that learning is cumulative and ongoing.

Strengthening Support for Teachers' Monitoring of Learning

Over recent decades, most of these jurisdictions have provided increased support to teachers to monitor student learning. The objective has been to assist teachers to establish where students are in their learning; to promote teaching focused on individual learning needs; to enable the evaluation of student progress over time; and to provide teachers with a better basis for judging the effectiveness of their teaching.

These uses of assessment to inform classroom teaching and learning can be contrasted with the more traditional use of assessment to evaluate how well students have learnt what they have been taught. This traditional use tends to occur after teaching and is largely a process of judging and grading student performance. The alternative these jurisdictions have been advancing is focused less on judging and grading than on understanding the points individuals have reached in their learning for the purposes of identifying useful next steps in teaching. Assessments of this kind—sometimes described as 'formative', 'diagnostic', or 'assessments for learning'—are undertaken prior to and during teaching.

The intention to give greater priority to the use of assessment to inform teaching and learning is made explicit in policy statements in all five jurisdictions. For example, Finland's Basic Education Act and General Upper Secondary Schools Act state that the purpose of assessment is to 'guide and encourage learning and to develop the pupil's capacity for self-assessment' (Finnish National Board of Education, 2010, p. 10). This purpose is reflected in a greater emphasis on assessment for teaching and learning in the 2014 Finnish national core curriculum—an emphasis that was welcomed by teachers. In Estonia, the 2010 Basic Schools and Upper Secondary Schools Act states that national regulation with regard to assessment 'reflects the contemporary understanding of the meaning of assessment in the learning process. The objective of the assessment of students is defined primarily as supporting the development of students' (Eisenschmidt et al., 2021, p. 63). Similarly, in Hong Kong, assessment is promoted as the process through which 'teachers collect ongoing information about students' learning, diagnose learning difficulty, and provide timely and quality feedback to enhance learning and plan for follow-up action' (Education Bureau, 2019, p. 1). And in South Korea, current education policies promote the increased use of assessment to assist students' learning.

Promoting assessment for teaching and learning

The traditional view of schooling begins with a curriculum that specifies what teachers are to teach and students are to learn in each grade of school. The role of teachers is to deliver this curriculum, to make it interesting and engaging, and to ensure that all students are exposed to, and have an opportunity to learn, what the curriculum specifies. The role of students is to learn what teachers teach. It is accepted that some students will be more successful in this than others. The role of assessment under this traditional view is to determine how well students have mastered the content of the curriculum, usually by administering a test or examination at the end of a period of instruction, such as a topic, semester or school year. The proportion of curriculum content a student is able to demonstrate is then reported in the form of a percentage, score/mark, or letter grade.

This traditional approach to assessment is primarily a process of judging or 'evaluating' how well students have learnt what they have been taught. The onus for success is on individual learners, and the outcomes of assessments are assumed to reflect the efforts they have made.

In contrast, these jurisdictions now view teaching as much more than the delivery of a centrally specified curriculum. For them, effective teaching depends on an awareness of, and sensitivity to, the diversity of students' backgrounds and starting points, and the ability to adapt teaching to address individual learning needs. They view learning as an ongoing, developmental, lifelong process that leads to increasingly sophisticated knowledge, deeper understandings, and higher levels of skill, but they recognize that students are often at very different points in their learning and that teaching, if it is to be effective,

must be differentiated to address these differences. They also recognize that students develop different understandings of what they are learning and that misconceptions can present significant obstacles to further progress if not diagnosed and addressed. And they understand that successful learning is more likely if students themselves are able to monitor the progress that they make and take a degree of responsibility for setting goals for their learning. This includes reflecting on their learning—for example, recognizing when they do not understand and proactively seeking additional information.

To be consistent with, and supportive of, more contemporary understandings of teaching and learning, assessments must inform and be an integral part of the teaching and learning process, not merely a final, judgmental event. Above all, they must provide information about where individuals are in their learning as a guide to next steps in teaching. They must provide qualitative interpretations of what individuals know, understand and can do, and diagnostic information about the kinds of misunderstandings they have developed, gaps in their knowledge, and errors they are making. Assessments must be designed to reflect an understanding of learning as a developmental process and the fact that students are usually at different stages in their learning. And assessments should provide feedback to guide students' attention and efforts and to build confidence in their capacity for successful learning by assisting them to see the progress they make over time.

These jurisdictions have been working over time to strengthen teachers' uses of assessment to inform teaching and learning in these ways. The starting point has been to recognize that teachers have the central role in undertaking assessments for teaching and learning purposes. They can be assisted in this role by access to quality assessment instruments, such as diagnostic tests and assessment frameworks, but the tasks of establishing where individuals are in their learning and monitoring the progress they make over time are an essential part of the professional responsibilities of teachers.

This central role of teachers in the assessment process is recognized in the curriculum reforms and policies of all five jurisdictions. It was a key element of the Learning to Learn curriculum reforms in Hong Kong. It is essential to the concept of 'process-oriented' assessment in Korea. It was a major feature of the 2010 curriculum changes in Estonia. And it underpins almost all thinking about assessment in Finland and British Columbia.

Support for teachers includes support to identify where students are in their learning and development. For example, Estonia provides preschools with recommendations on how to examine the readiness of children for school. Preschools may design their own evaluation tools in areas such as mental calculation, dictation, and general school readiness to assist teachers in identifying children who may need additional support on entry to school. Estonia also provides teachers with electronic tests in core subjects at particular grades for the purposes of establishing the points individuals have reached in their learning at the start of the school year.

Other support in establishing where students are in their learning is provided in the form of frameworks that describe and illustrate progress in particular areas of the curriculum. The concept of development or progression is a central feature of these frameworks. Teachers are assisted to gather information about students and then to use that information to make judgments about where they are in their progress—usually against a sequence of levels of increasing proficiency. British Columbia provides frameworks of this kind through its performance standards. More generally, the concept of student progress or growth has been given increasing priority in these jurisdictions' assessment processes. In 2004, the Estonian Basic School and Upper Secondary Act introduced the concept of 'development conversations' with parents and students about learning progress, and the 2010–2011 national curriculum identified one of the major purposes of assessment as the comparison of students' current levels of attainment with their past performances. Korea, too, states that the focus when assessing should be on the growth and development of each student based on student performances and teacher observations.

In addition to supporting teachers to establish where students are in their learning, some jurisdictions also provide targeted teaching advice and resources appropriate to students' levels of attainment. For example, the Education Bureau in Hong Kong provides web-based learning and teaching support to accompany assessments of basic competencies. This takes the form of optional teaching activities and materials to address individuals' learning needs and difficulties. Similarly, the Korea Institute for Curriculum and Evaluation (KICE) provides teachers with an online basic education improvement support system linked to results on that country's subject learning diagnostic tests.

Beyond assessment materials and assessment frameworks, these jurisdictions provide general support to enhance teachers' understandings of assessment for teaching and learning. For example, the ministry in British Columbia provides a Framework for Classroom Assessment to strengthen the design of classroom assessments based on daily student work, teacher-made tests and quizzes, written assignments, and group projects. The framework was prepared to guide teachers' development and implementation of classroom assessments in English language arts, mathematics, science, and social studies. Hong Kong also provides teachers with a Framework for School Assessment Practices that provides advice to teachers on different forms and uses of assessment.



In Summary

These jurisdictions have given increasing priority to the use of assessment to inform teaching and learning. Such assessments are undertaken by teachers before or during teaching to understand individuals and their learning, rather than after teaching for the purposes of judging and grading student performances.

Supporting teachers to identify where students are in their learning

A priority in these jurisdictions has been to provide teachers with support to establish the points individual students have reached in their learning, to identify next steps for teaching, and to monitor the progress students make in their learning over time.

One form of support is the development and provision of optional, low-stakes tests that teachers can use to assess learning and guide classroom teaching. Such assessments include Estonia's standard-determining tests, administered at the start of the school year in key subjects in particular grades to identify the points individuals have reached in their learning, to diagnose areas of strength and weakness, and to establish starting points for teaching and learning. In the past, these were provided at a number of grades and in a range of subjects (see Table 5.1), but more recently have been conducted at Grades 4 and 7. They also include Korea's subject learning diagnostic tests, administered in a range of subjects across the school years to assist schools to identify students in need of additional support, and standardized diagnostic tests in Finnish and mathematics available at various grades to municipalities and teachers in Finland. And they include Hong Kong's online assessment item bank and its reports to assist teachers to monitor student progress and identify learning difficulties, and its Territory-wide System Assessment (TSA) to support schools in monitoring students' achievement of minimally acceptable standards in Chinese, English, and mathematics in Grades 3, 6, and 9.

Table 5.1 Estonia: Past Standard-Determining Tests

Grade 3	Estonian/Russian
Grade 4	Natural sciences and mathematics
Grade 6	Estonian/Russian
Grade 7	Natural sciences and mathematics
Grade 8	Digital competences
Grade 11	Digital competences

Note: Eisenschmidt et al.

Another form of support is the development and provision of described and illustrated frames of reference for monitoring student learning. Korea provides teachers with a way of assessing and monitoring student progress toward the achievement of individual curriculum objectives. Progress occurs through three described levels—lower (insufficient); middle (normal); and upper (excellent)—referred to as ‘assessment standards’ (see Table 5.2).

Table 5.2 South Korea: Assessment Standards (Example: History)

Objective	Identify the efforts towards unification and explore methods of peaceful unification
Upper (excellent)	Students can explain the content and characteristics of the efforts towards unification using data and can explain the methods of peaceful unification.
Middle (normal)	Students can present and explain the efforts towards unification as examples and can describe the content of methods for peaceful unification.
Lower (insufficient)	Students can say that there are efforts towards unification and methods for peaceful unification.

Note. From “Comparative Study of Learning Systems: Korea (draft)”, by Lee et al. Reprinted with permission.

British Columbia provides teachers with a way of assessing and monitoring student progress not for individual curriculum objectives, but for larger areas of learning. Progress occurs through four levels—not yet within expectations; minimally meets expectations; fully meets expectations; and exceeds expectations (see Table 5.3). Each of these four levels is described in some detail and accompanied by examples of student work illustrative of that level. Performance standards have been developed for reading, writing, numeracy, social responsibility, and healthy living. Most of these standards were developed in 2000, with some being revised and standards for healthy living being added in 2009. Table 5.4 shows the four performance standards for one of two aspects of reading in Grade 6 (Reading for Information). Teachers are encouraged to develop complex, realistic assessment tasks capable of providing information that can be used to make judgments about the level demonstrated in a student’s work.

These four performance levels are now being replaced by a 4-level proficiency scale: ‘emerging’, ‘developing’, ‘proficient’, ‘extending’. Reading and writing are being combined as ‘literacy’, and the literacy and numeracy standards are being aligned with the new curriculum.

Table 5.3 British Columbia: Performance Standards

Exceeds expectations	The work exceeds grade-level expectations in significant ways; the student may benefit from extra challenge.
Fully meets expectations	The work meets grade-level expectations; there is evidence that relevant prescribed learning outcomes have been accomplished.
Minimally meets expectations	The work may be inconsistent but meets grade-level expectations at a minimal level; there is evidence of progress toward relevant prescribed learning outcomes; the student needs support in some areas
Not yet within expectations	The work does not meet grade-level expectations; there is little evidence of progress toward the relevant prescribed learning outcomes; the situation needs intervention.

Note: British Columbia Ministry of Education, 2005, p. 3). Reprinted with permission.

Finland does not provide teachers with standards frameworks for assessing and monitoring student progress. The goals in the national core curriculum are not considered standards, and in any case, there is evidence that teachers are not always familiar with these goals (Ouakrim-Soivio & Kuusela, 2012, cited in Ouakrim-Soivio & Kupiainen, p. 103). As a result, the only records of student attainment prior to the matriculation examination at the end of secondary school are the summative grades awarded by teachers at the end of each school year. These are reported on a scale from 4 (failed) to 10 (excellent). These teacher-assigned grades lack comparability across schools, which Finland is attempting to address. Optional standardized tests in key school subjects were introduced to provide more consistent grading but were abandoned. In an effort to improve comparability, verbal descriptions of some points on this grade scale have now been developed, including for a grade of 5 (lowest acceptable achievement). However, this standard setting has occurred only in the context of summative grading, and not to provide a framework for monitoring learning and guiding teaching.

Table 5.4 British Columbia Performance Standards (Grade 6, Reading for Information - Summary)

Aspect	Not yet within expectations	Meets expectations (minimal level)	Fully meets expectations	Exceeds expectations
<p>Snapshot</p> <p>Note: The snapshot can be used alone as a holistic scale for marking some assignments.</p>	<p>With support, the student may be able to read short, simple, and direct material with familiar language and simple graphics. Work is often vague, incomplete, or inaccurate. may need one-to-one support to complete task.</p>	<p>The student is able to read generally straightforward materials, including illustrations and other graphics. Work is often inconsistent; parts are accurate and complete, others are vague, incomplete, and lack detail.</p>	<p>The student is able to read straightforward information and procedures, including illustrations and other graphics, with some specialized language and complex ideas. Capital work is generally accurate and complete; gives specific references.</p>	<p>The student is able to read elaborated information and procedures, including illustrations and other graphics, with specialized language and complex ideas. Capital work is thorough, independent, and efficient, often exceeding requirements of the task.</p>
<p>Strategies:</p> <ul style="list-style-type: none"> • comprehension strategies • word skills • predicting • text features • locating detail 	<ul style="list-style-type: none"> • does not check for understanding • tends to sound out new words; often gives up • has difficulty predicting content; may guess new bullet needs assistance to use text features • often guesses rather than rereading to locate specific details 	<ul style="list-style-type: none"> • checks for understanding; may need help choosing strategies • relies on sounding out and context for new words • makes simple logical predictions about content • may need prompting to use text features • tends to be inefficient in locating details 	<ul style="list-style-type: none"> • checks for understanding; draws on a range of strategies • uses range of word skills; may need reminder • makes logical predictions about context; may predict structure • uses text features effectively to preview and locate information • skims, rereads for details 	<ul style="list-style-type: none"> • checks for understanding; choose effectively from a wide range of strategies • uses range of effective word skills; independent • anticipates content and structure • uses text features effectively to preview, locate, organize • efficiently skims and rereads for details
<p>Comprehension:</p> <ul style="list-style-type: none"> • accuracy and completeness • main ideas • details • note-making • inferences 	<ul style="list-style-type: none"> • often inaccurate, vague, incomplete • confuses main and supporting ideas • may Identify some relevant supporting details; omits a great deal • has difficulty making notes, even with a template • misinterprets literal information 	<ul style="list-style-type: none"> • partially accurate, but may be vague, incomplete • identifies most main ideas; has trouble restating in own words • identifies some relevant supporting details • makes simple notes if given a template • makes some inferences, but these may be illogical 	<ul style="list-style-type: none"> • clear, complete, accurate • accurately identifies main ideas • identifies relevant supporting details • makes accurate notes using simple, logical categories • Makes some simple inferences; may be unsupported 	<ul style="list-style-type: none"> • precise, thorough; may be insightful • accurately restates main ideas; may explain how they connect • identifies specific, relevant details; thorough • makes accurate, organized notes using effective categories; makes and supports simple inferences
<p>Analysis:</p> <ul style="list-style-type: none"> • connections to other information • reactions 	<ul style="list-style-type: none"> • has difficulty connecting new information to prior knowledge (may have little prior knowledge) • reactions or judgements are often vague or unsupported 	<ul style="list-style-type: none"> • makes some simple, obvious connections between new information and prior knowledge • offers some simple reactions or judgements; reasons are often vague 	<ul style="list-style-type: none"> • makes logical connections between new information and prior knowledge and beliefs • offers simple reactions or judgements; reasons may be vague 	<ul style="list-style-type: none"> • compares new information to prior knowledge and beliefs; may show insight • offers reactions or judgements with reasons; may evaluate information

Note: From “Quick Scale: Grade 6 Reading for Information”, by British Columbia Ministry of Education, 2005, p. 193. Reprinted with permission.

Box 5.1 Supporting Teachers to Identify Where Students Are in Their Learning: Jurisdiction Summaries

British Columbia provides teachers with ‘performance standards’—four described levels of attainment in key aspects of reading, writing, numeracy, social responsibility, and healthy living. Each level is illustrated with samples of student work. The performance standards, which are optional but widely used, are designed to support teachers’ development of performance assessments (‘complex, realistic tasks’ that require the application of skills and concepts). Teachers can use performance standards for a range of purposes, including monitoring, evaluating, and reporting on individual student performance; identifying students who may benefit from intervention; and collaboratively setting goals for individuals, classes, or schools. The performance standards were first published in 1999 and are being updated to align them with the current curriculum.

Estonia provides teachers with ‘standard determining tests’ to give teachers, students and parents objective information about student learning in selected subjects in particular years of school. These electronic tests are low-stakes and it is emphasized that no additional preparations need to be made for these assessments. Standard-determining tests are conducted in the autumn to give teachers information about students’ levels of attainment on commencing the school year. Students are provided with feedback on their performance. For example, in mathematics, three levels of attainment are defined (skilled, familiar, and study more) for each of computation, geometric shapes, measurement, and word problems. In addition, an electronic examination information system has been developed for storing and administering electronic tasks for teacher and student use, and for providing feedback on student performance.

Finland does not provide teachers with standards frameworks for monitoring student learning. There has been a principle of not using common, standardized tests, except at the end of general upper secondary school, although optional diagnostic tests in Finnish and mathematics are available to teachers at particular grades. Instead, teachers assess their own students’ progress as part of the teaching and learning process and administer classroom tests and examinations at the end of individual topics. Tests and examinations covering a whole year’s or even a term’s learning are rare. Subject-specific assessment criteria have been developed, but these are for final grading purposes rather than to inform teaching and learning and are a response to the observation that teachers’ summative grades are generally not consistent across teachers or schools.

Box 5.1 Supporting Teachers to Identify Where Students Are in Their Learning: Jurisdiction Summaries (*continued*)

Hong Kong provides teachers with support in monitoring student progress through an online assessment item bank and a Territory-wide Assessment System (TAS). Both are focused on core learning elements (referred to as ‘basic competencies’) in English, Chinese and mathematics required for the next stage of learning. Use of the item bank is optional and provides instant feedback for reviewing student progress and learning difficulties. The TSA is intended to be low-stakes and is taken by a sample of students in Year 3 and all students in Years 6 and 9. Schools and students are advised against preparing specifically for the tests. Individual student results are not reported and each school’s results are reported only to that school to inform teaching and learning. Reports show the percentage of students achieving a minimum standard in each subject.

Korea provides teachers with a set of levels for assessing the extent to which students have achieved each objective in the curriculum. These levels are usually labelled ‘upper’ (excellent), ‘middle’ (normal), and ‘lower’ (insufficient). Brief descriptions of each level outline what students at that level know and can do. Assessments of student learning against these levels are referred to as ‘achievement standards-based’ assessments and are being promoted as a major method of assessing student performance. In addition, Korea provides a voluntary, low-stakes Subject Learning Diagnostic Test (SLDT) to help schools identify and support students who are struggling academically. In the early years of school, these tests cover basic Korean language and basic mathematics. Other subjects are covered in later years. Municipal and provincial offices conduct the tests and provide interventions.

In Summary

Most of these jurisdictions provide teachers with support to establish the points students have reached in their learning, to identify next steps for teaching, and to monitor the progress students make in their learning over time. One form of support is the provision of diagnostic tests, item banks, and other assessment instruments. Another form of support is the provision of frames of reference (sequences of proficiency levels) against which teachers can assess and monitor student progress.

Assessing a Broader Range of Learning Outcomes

The decision by these jurisdictions to give greater priority in their curricula to deep disciplinary learning—that is, the ability to apply essential concepts, principles and methods of a discipline in meaningful contexts—and to give more explicit priority to the development of general competencies and personal attributes, has introduced questions about the best ways to assess this broader range of intended learning outcomes. All five jurisdictions are addressing this question, albeit with different levels of priority and varying approaches.

At one level, the challenge can be seen as one of broadening the ‘what’ and ‘how’ of assessment. There are implications first for ‘what’ should be assessed in schools. As noted in Chapter 4, all five jurisdictions have been working to broaden the range of knowledge, understandings, skills, and attributes that schools are expected to develop. In particular, there has been a shift over time from a strong focus on the reproduction of knowledge and theory and the mastery of routines to an increased focus on deep understanding, skills in thinking and applying knowledge, and a range of personal attributes, including in some jurisdictions attitudes and values. In all jurisdictions the range of intended learning and development has been expanded and made more explicit, with implications for what teachers are expected to develop and assess.

The intention to address and develop a broader range of learning outcomes has led to the observation that traditional modes of assessment—that is, ‘how’ learning is assessed—are incapable of providing quality evidence about many newly prioritized intentions for student learning and development. For example, multiple-choice questions may be inadequate for assessing deep understanding and the ability to transfer and apply knowledge. Critical thinking and creative thinking may require quite different ways of observing students and their work. And the assessment of personal attributes may require still other forms of observation. All five jurisdictions have recognized that broadening the ‘what’ of student learning has far-reaching implications for ‘how’ this broader range of outcomes is assessed.

At a deeper level, the priority now being given to conceptual understanding, critical and creative thinking, skills in applying knowledge, and personal competencies and attributes is bringing a shift in how the assessment process itself is understood. If a curriculum is largely a specification of facts and procedures that students are expected to learn and reproduce, assessment usually becomes a process of establishing whether or not students can demonstrate these intended outcomes. When there is a body of such content to be learnt in a specified period, such as a school year, assessments indicate how much of the total body of content students can demonstrate.

However, many areas of learning and development do not lend themselves to being listed on a checklist and recorded as present or absent. They are more developmental in nature. For example, critical thinking and creative thinking are developed continuously across the years of school. Deep understandings of disciplinary concepts, principles and methods, and the ability to transfer and apply those understandings also develop progressively over extended periods of time. So do personal attributes and dispositions such as perseverance, and all attitudes and values. Outcomes of these kinds are catalyzing a change in the way learning and assessment are conceptualized. The purpose of assessment (the ‘why’) becomes less about establishing the presence/absence of specific pieces of content, and more about establishing where students are in their long-term learning and development. This requires a view of learning as an ongoing process through which knowledge, skills, and attributes are deeply integrated. At least some of these jurisdictions are developing their assessment processes around this emerging understanding of learning.

Broadening the what and how of assessment

These jurisdictions recognize that simply specifying a broader range of intended learning outcomes in the curriculum will not mean that they are valued and addressed in schools, particularly if teachers are

uncertain about how to teach and develop them, and if formal assessment processes, such as tests and examinations, address a much narrower range of learning. For example, there would be little incentive for teachers to develop students' deep conceptual understandings and higher-order skills in applying disciplinary knowledge if the assessments that mattered to students and parents were based only on the memorization of facts and the demonstration of routines. Efforts to prioritize general competencies such as entrepreneurship, digital literacy, and collaborative problem-solving are likely to be undermined if the performances of school systems were evaluated and compared only on a narrow range of traditional learning. And there would be little point in expecting teachers to develop student attributes, dispositions, attitudes, and values if they had no way of knowing whether their efforts to do this were being successful. In school education, it is common to observe that what is assessed is valued, and for this reason alone, these jurisdictions are working to broaden schools' assessment processes.

At the same time, it is recognized that abandoning traditional metrics of student and system performance may leave stakeholders, including parents, unclear about educational standards. Most of these jurisdictions have been working not to replace, but to complement, existing measures of student learning and development with a broader set of measures and indicators.

Estonia has been working to broaden its assessments of student learning since the early 1990s. Following the adoption of its 1996 curriculum, a requirement was introduced that at least 50% of the national upper secondary examination address higher-order thinking skills as defined by Bloom's Taxonomy (Bloom et al., 1956). Following that country's participation in the OECD's Programme for International Student Assessment (PISA) assessments in 2006, a decision was made to complement multiple-choice questions in its Grade 9 graduation examinations with more problem-solving tasks that require students to apply their knowledge. In parallel, assessments of mathematical literacy in Grade 4 and scientific literacy in Grade 7 are being developed and piloted with Tallinn University and Tartu University. These tests, which are described as 'competence-based', are designed to assess deep learning and students' abilities to apply what they have learnt. The longer-term plan is to assess growth in mathematical and scientific literacy from Grade 4 through the years of school.

Similar developments are occurring in other school systems, with a shift in emphasis from assessing what students know to assessing what they can do with what they know. The OECD's PISA assessments appear to have been an important influence on this change. In most systems, this shift in emphasis requires the reform of existing tests and examinations, which is proving a particular challenge at the end of secondary school.

Inevitably, changes in 'what' school systems choose to assess have implications for 'how' learning is assessed. Ideally, students' abilities to use their knowledge might be demonstrated in real-life situations and working collaboratively with others—in other words, be 'creative, integrative, practical, and collaborative' (Cheng 2017, p. 13). Such assessments are generally difficult to conduct in high-stakes examination contexts but are becoming more common components of schools' own assessments. For example, Hong Kong promotes schools' use of authentic and continuous assessments based on fieldwork, project reports, and group discussions.

The priority now being given to general competencies and personal attributes in the curriculum presents particular assessment challenges. In some jurisdictions guidelines for the assessment of competencies and attributes have been developed, but these are often vague and schools are left to decide on the details of assessment. In others, resources have been developed to assist schools. Most jurisdictions have been moving cautiously. For example, British Columbia has encouraged teacher experimentation in assessing competencies and attributes before considering provincial policy. Estonia has been undertaking research in conjunction with its universities into alternative ways of gathering information about particular competencies. Finland has been developing a platform for teacher and student use in assessing general ('transversal') skills.

One area in which work has been done to develop assessment resources for teachers is ‘learning to learn’. Finland developed assessment materials in learning to learn, for use by first grade teachers, as part of its 1997 Assessment Strategy for Basic Education. Estonia has also developed voluntary assessment materials for students in Grades 2, 3, 6, and 8. These materials provide teachers with feedback on students’ skills in areas such as the planning of learning, memorization strategies, seeking help and further information, and reading strategies. The assessment resources are made available to schools on the Education and Youth Authority website. Work has also been undertaken to develop assessment resources in other areas, including entrepreneurship and self-regulation.

Still more challenging is the assessment of attitudes, values and social outcomes. Hong Kong’s Bureau of Education developed an assessment program for affective and social outcomes in 2003 and revised and relaunched this in 2010. In primary schools, the program involves the assessment of four dimensions: self, self-others, self-school, and self-society. In secondary schools, a fifth assessment dimension is added: self-future. Within these dimensions, students are assessed on a number of subscales.

In an effort to develop and value a wider range of learning outcomes, these jurisdictions have also introduced various cross-disciplinary activities, projects, and ways of gathering evidence of learning. For example, to graduate from secondary school in British Columbia, students complete a career education ‘capstone project’ through which they reflect on their in- and out-of-school learning experiences; students in Estonia complete a ‘creative project’ by the end of Grade 9 based on cross-curricular learning activities; students in Finland undertake multidisciplinary learning modules in each year to the end of Grade 9; students in Hong Kong are encouraged but not required to prepare a ‘student learning profile’ that summarizes their achievements outside formal courses; and students in Korea participate in a range of ‘free semester’ activities. These are all designed to broaden learning beyond traditional school subjects and to provide evidence of that broader learning.



In Summary

These jurisdictions are working to assess a broader range of learning outcomes using a wider variety of assessment methods. In addition to assessing what students know, greater emphasis is being placed on the assessment of what students can do with what they know. At the same time, new methods of assessment are being developed and investigated for general competencies and personal attributes. These methods include self-assessments, cross-disciplinary projects, and portfolios of evidence of learning.

Assessing and monitoring the development of competencies and attributes

The development of general competencies and personal attributes has been a long-standing priority for some schools and school sectors, especially more selective schools. However, as the purposes of schooling have been broadened for all students to encompass not only the mastery of factual and procedural knowledge, but also critical and creative thinking; deep understandings of disciplinary concepts, principles, and methods; general competencies such as skills in communicating and working collaboratively with others; personal attributes including resilience, perseverance, and self-control; and, in some countries, attitudes and values, it has become necessary not only to broaden methods of observation and evidence gathering for the purposes of assessment, but also to reconceptualise assessment itself.

When curricula prioritize memorization and the mastery of a body of facts and routines, assessment processes tend to be designed to establish whether individuals can demonstrate specific learning objectives of this kind. Teachers sometimes describe such curricula as ‘checklists’ of intended outcomes that have to be covered in their teaching. (For example, teachers in British Columbia sometimes referred to the

earlier Integrated Resource Packages (IRP) curriculum as an overcrowded checklist of material they were expected to teach.) In curricula of this kind, the assessment question is whether or not students can recall and demonstrate individual facts and routines, and formats such as multiple-choice questions are often effective and efficient methods for doing this.

As the purposes of schooling have been broadened, the limitations of this way of thinking about the school curriculum, learning and assessment have become increasingly evident. Much school learning is now seen not as the mastery of isolated pieces of knowledge, but as a more integrated, developmental, and continuous process. The conception of a curriculum as a body of discrete facts and routines to be taught and learnt by all students at a specific stage of their schooling in the same amount of time is being replaced by curricula that take the form of frameworks or roadmaps for student development. The long-term perspectives these frameworks provide are more appropriate than checklists for guiding the development of student thinking and deep understanding, general competencies and personal attributes, and attitudes and values. And the role of assessment is not so much to determine the presence or absence of individual pieces of knowledge as to establish and understand the stages students have reached in their long-term development.

An example of such a framework is British Columbia's framework for assessing and monitoring the development of critical and reflective thinking (Table 5.5). This framework has been developed only to enable student reflection and self-assessment. 'Critical and Reflective Thinking' is described as developing through six levels, from the lowest (1) to the highest (6). These levels are 'not tied to specific grade levels and are reflective of lifelong development' (Government of British Columbia, n.d.a, para. 10; see Box 5.2). Parallel frameworks have been developed for a number of other 'core competencies': communicating, collaborating, creative thinking, personal awareness and responsibility, positive personal and cultural identity, and social awareness and responsibility.

**Table 5.5 British Columbia Critical and Reflective Thinking Framework
(For Student Reflection and Self-assessment)**

Profile	Critical and Reflective Thinking
6	<p><i>I can examine evidence from various perspectives to analyze and make well-supported judgements about and interpretations of complex issues.</i></p> <p>I can determine my own framework and criteria for tasks that involve critical thinking. I can compile evidence and draw reasoned conclusions. I consider perspectives that do not fit within my understanding. I am open-minded and patient, taking time to explore, discover, and understand. I make choices that will help me create my intended impact on an audience or situation. I can place my work and that of others in a broader context. I can connect the results of my inquiries and analysis with action. I can articulate a keen awareness of my strengths, my aspirations, and how my experiences and contexts affect my frameworks and criteria. I can offer analysis, using specific terminology, of my progress, work, and goals.</p>
5	<p><i>I can evaluate and use well chosen evidence to develop interpretations; identify alternatives, perspectives, and implications; and make judgments. I can examine and adjust my thinking</i></p> <p>I can question and offer judgments, conclusions, and interpretations supported by evidence I or others have gathered. I am flexible and open-minded; I can explain more than one perspective and consider implications. I can gather, select, evaluate, and synthesize information. I consider alternative approaches and make strategic choices. I take risks and recognize that I may not be immediately successful. I examine my thinking, seek feedback, reassess my work, and adjust. I represent my learning and my goals and connect these with my previous experiences. I accept constructive feedback and use it to move forward.</p>
4	<p><i>I can gather and combine new evidence with what I already know to develop reasoned conclusions, judgments, or plans.</i></p> <p>I can use what I know and observe to identify problems and ask questions. I explore and engage with materials and sources. I can develop or adapt criteria, check information, assess my thinking, and develop reasoned conclusions, judgments, or plans. I consider more than one way to proceed and make choices based on my reasoning and what I am trying to do. I can assess my own efforts and experiences and identify new goals. I give, receive, and act on constructive feedback.</p>
3	<p><i>I can ask questions and consider options. I can use my observations, experience, and Imagination to draw conclusions and make judgments.</i></p> <p>I can ask open-ended questions, explore, and gather information. I experiment purposefully to develop options. I can contribute to and use criteria. I use observation, experience, and Imagination to draw a conclusions, make judgments, and ask new questions. I can describe my thinking and how it is changing. I can establish goals individually and with others. I can connect my learning with my experiences, efforts, and goals. I give and receive constructive feedback.</p>
2	<p><i>I can use evidence to make simple judgments.</i></p> <p>I can ask questions, make predictions, and use my senses to gather information. I can explore with the purpose in mind and use what I learned. I can tell or show others something about my thinking. I can contribute to any new simple criteria. I can find some evidence and make judgments. I can reflect on my work and experiences and tell others about something I learned.</p>
1	<p><i>I can explore.</i></p> <p>I can explore materials and actions. I can show whether I like something or not.</p>

Note: Adapted from “Critical Thinking and Reflective Thinking”, by Government of British Columbia, n.d.b (<https://curriculum.gov.bc.ca/competencies/thinking/critical-and-reflective-thinking>). Copyright 2023 by the Government of British Columbia. Reprinted with permission.

Box 5.2 British Columbia: Development of Core Competencies

Before students enter school, development of core competencies begins at home and then continues throughout their life. Students encounter opportunities to develop their competence in formal and informal settings. They move from demonstrating competence in relatively simple and highly supported situations, to demonstrating independence in more complex and varied contexts. Competency development does not end with school graduation but continues in personal, social, educational, and workplace contexts.

(Government of British Columbia, n.d.a, para. 3)

The levels of these frameworks are described as ‘progressive and additive, and they emphasize the concept of expanding and growing’. As students move through the levels, they maintain and enhance competencies from earlier levels while developing new skills. It is also pointed out that students may find themselves reflecting aspects of more than one level at any given time. British Columbia encourages teachers to provide students with opportunities to reflect on their experiences both at school and outside of school and to select illustrations of their growth in relation to the core competencies throughout the year. Students’ self-assessments in the areas of thinking, communication, and personal and social development are reported at the end of each school year.

In Summary

As the purposes of schooling have been broadened, newly prioritized learning intentions such as critical and creative thinking, deeper disciplinary understanding, communicating and collaborating, personal attributes, attitudes, and values are catalyzing new conceptions of the curriculum, learning and assessment. Learning is viewed less as the mastery and demonstration of specific curriculum objectives and more as a process of integrated, continuous, long-term development.

Providing More Informative Communications About Student Learning

Most of these school systems have been working to support teachers to use assessments to inform their teaching and learning. This includes the use of assessments to establish where students are in their learning; to diagnose knowledge/skill gaps and misunderstandings; to identify useful next steps for teaching and learning; and to monitor student progress over time. However, these classroom uses of assessment are often not closely linked to teachers’ other task of grading and reporting students’ performances to parents/guardians and students themselves.

This disconnect between teachers’ monitoring of learning and the reporting of learning is commonly rationalized by reference to a long-standing distinction between ‘formative’ assessments for classroom use and ‘summative’ assessments for reporting purposes. In some school systems, separate mid-year or end-of-year tests and examinations provide the basis for summative reports of performance. In other systems, teachers may be encouraged to take into account assessments they make during the year to arrive at a final grade, sometimes with little guidance on how they should do this. In these five jurisdictions, limited progress has been made in developing more integrated approaches to monitoring learning and communicating learning.

However, some progress has been made in developing more informative descriptions of the points students have reached in their learning (that is, descriptions of what they know, understand, and can do) as part of grading processes, and there is growing recognition of the desirability of also providing information about the progress students make in their learning over time.

Communicating students' levels of attainment

Conventional approaches to reporting have been based on tests or examinations administered at the end of a course to establish how much of what a student has been taught they have successfully learnt. As noted above, these are often referred to as 'summative' assessments and tend to be unrelated to assessments made by teachers to inform teaching and learning during a course. Students' performances on summative tests and examinations are usually reported as marks/scores or percentages, which may also be converted to grades.

Traditional grades have not been defined as explicit standards of attainment. Sometimes, they have been defined simply as score ranges. For example, in Korean lower secondary schools, students scoring 91% and above are awarded an 'A' (see Box 5.3). Under this approach, the absolute meaning of grades varies with the difficulties of the tests/examinations students are administered. In other cases, grades have been assigned to predetermined percentages of the student population. For example, in Korean upper secondary schools, the top 4% of students are assigned a grade of '9'. Under this approach, the absolute meaning of grades varies with the abilities of the student cohorts being assessed. In grading schemes of these kinds, grades are usually not interpreted substantively—that is, they are not accompanied by descriptions of what students achieving each grade know, understand, and can do.

Box 5.3 South Korea: Grades Awarded in Secondary Schools

Historically, the reporting of student achievement in Korean secondary schools was based on scores on mid- or end-of-semester tests, converted to percentages, and then five grades:

E (ga)	D (yang)	C (mi)	B (woo)	A (soo)
<60%	61-70%	70-80%	81-90%	91-100%

In 2004, the Ministry of Education changed grading in upper secondary schools to nine grades, with predetermined percentages of students being assigned each grade. Lower secondary schools continued to use A to E grades.

9	8	7	6	5	4	3	2	1
4%	7%	12%	17%	20%	17%	12%	7%	4%

Note: Adapted from "Academic Grading System in South Korea" by South Korea Education, n.d. (<https://www.south-koreaeducation.info/education-system/academic-grading-system-in-south-korea.html>). Copyright 2023 Pragati Infosoft. Reprinted with permission.

In Finland, assessment criteria in the national curriculum guide teachers' decisions about the grades they award. Attempts to develop descriptive interpretations of grades appear to have been made not so much to provide parents with more meaningful indications of what students have achieved, but as a response to concerns about a demonstrated lack of consistency in the awarding of grades from one teacher to another, and from one school to another.

The lack of consistency in grading in Finland matters because the grades teachers give at the end of each year determine whether or not students are promoted to the next grade, and results at the end of Grade 9 determine the upper secondary schools to which students are admitted. Because students enter either an academic or a vocational track at the end of Grade 9, and because competition for entry is strong in some parts of the country, the stakes for students are relatively high. However, the variability in teachers' grades has been well established and is widely acknowledged. To address this problem, the national agency has developed criteria to be applied by all teachers in awarding grades.

Grades in Finland were originally reported on a scale of 1 to 10, with grades below 5 being treated as failing grades. Later, all failing grades were collapsed to a single grade of 4, making the available grade range 4 to 10. The curriculum provided criteria only for a grade of 8 ('good'). More recently, descriptive criteria have been developed for grades of 5 ('adequate'), 7 ('sufficient') and 9 ('very good'). The 2004 curriculum introduced the possibility of verbal reports only to Grade 8. However, the 2014 curriculum required numerical reports for all students after Grade 4.

End-of-year reports to Finnish students and parents must include written or verbal comments on a student's performance, information about their behavior, and a decision on whether they will progress to the next grade. At the end of Grade 2, information is provided on students' development of general competencies, including skills in self-management, and capabilities in Finnish and either Swedish or a foreign language.

Estonia has a long history of summative assessments and grades. Under the national curriculum, student attainment is reported as: 1 (weak), 2 (poor), 3 (satisfactory), 4 (good), and 5 (very good), with grades of 1 and 2 considered 'failing' grades. Grades are awarded as part of ongoing studies, at the completion of periods of learning, and at the end of the school year. As in Korea, the national curriculum provides guidance on how grades are determined (0%–19% weak; 20%–49% poor; 50%–74% satisfactory; 75%–89% good; 90%–100% very good). Basic schools (primary and lower secondary) can use different grading schemes, but when a student leaves a school, these must be converted to a 5-point scale. Efforts have been made to provide more descriptive explanations of student learning, including through annual 'development interviews' involving the teacher, parent, and student, and through electronic communications with parents, however feedback to schools is that parents find traditional numerical reporting more helpful than descriptive information.

Hong Kong introduced 'standards-referenced' reporting in its new upper secondary examination (the Hong Kong Diploma of Secondary Education) in 2012, following piloting in its earlier Chinese and English language examinations. Grades A to F were replaced by five levels (1 to 5), each representing an explicit and fixed standard of attainment. Top-scoring students in Level 5 were awarded a '5*'. To establish these levels, samples of student work from past examinations were used to develop descriptions of each level. These descriptions provided a broad definition of the standards (see example in Box 5.4). However, the decision about the level a student has achieved is based on their examination score. Annual standard-setting processes by panels of judges determine the cut-scores between levels on each examination. Descriptions of the levels are published, together with samples of student work that illustrate each level. In addition to level descriptions for each subject, a set of generic descriptions has been developed (Box 5.5).

Box 5.4 Hong Kong: English Language Descriptors (HKCEE Examination)

A typical candidate at Level 5:

- Develops ideas well in writing, and generally writes in a way suitable for the purpose in both style and content; uses accurate spelling and punctuation, and mainly correct grammar; uses a wide vocabulary, and appropriate paragraphing.
- Reads a range of texts with understanding; follows the development of arguments in texts; has a wide vocabulary and is usually able to work out the meaning of unfamiliar words; can follow detailed written instructions, and select appropriate information from texts to complete a task.
- Can understand spoken English at near-normal speed, in both familiar and some less familiar accents; interprets speakers' stress and intonation to identify their attitudes and intentions; takes relevant notes while listening to a speaker.
- Expresses a range of ideas, in clear and well-pronounced English; can hold an extended conversation in most situations; participates actively and constructively in discussions.

(Goodwin et al., pp. 96–98)

Box 5.5 Hong Kong: Generic Descriptors for HKCEE Examinations

Level 5

Candidates at this level typically demonstrate:

- comprehensive knowledge and understanding of the curriculum and the ability to apply the concepts and skills effectively in diverse and complex unfamiliar situations with insight.
- ability to analyse, synthesise, and evaluate information from a wide variety of sources.
- ability to communicate ideas and express views concisely and logically.

Level 4

Candidates at this level typically demonstrate:

- good knowledge and understanding of the curriculum and the ability to apply the concepts and skills effectively in unfamiliar situations with insight.
- ability to analyse, synthesise, and interpret information from a variety of sources.
- ability to communicate ideas and express views logically.

Level 3

Candidates at this level typically demonstrate:

- adequate knowledge and understanding of the curriculum and the ability to apply the concepts and skills appropriately in different familiar situations.
- ability to analyze and interpret information from a variety of sources.
- ability to communicate ideas and express views appropriately.

Level 2

Candidates at this level typically demonstrate:

- basic knowledge and understanding of the curriculum and the ability to apply the concepts and skills in familiar situations.
- ability to identify and interpret information from straightforward sources.
- ability to communicate simple ideas in a balanced way.

Level 1

Candidates at this level typically demonstrate:

- elementary knowledge and understanding of the curriculum and the ability to apply the concepts and skills in simple familiar situations with support.
- ability to identify and interpret information from simple sources with guidance.
- ability to communicate simple ideas briefly.

(Goodwin et al., pp. 96–98)

British Columbia is a jurisdiction that has addressed the need for better alignment between the monitoring of learning and the reporting of learning. Following the introduction of its new curriculum, the ministry sought advice on how provincial reporting policies could be better aligned with the intentions of new assessment processes—in particular, the intentions to promote the positive recognition of students’ achievements and to encourage student goal-setting and self-reflections on learning. The Classroom Assessment and Reporting Advisory Group was established and confirmed the need for new forms of reporting more consistent with the way teachers were being asked to monitor learning. A survey of parents identified a need for more descriptive and individualized feedback. And a commissioned review of research from the University of British Columbia, University of Victoria, and Vancouver Island

University provided support for ongoing communication with parents, a focus on student proficiency rather than letter grades, and the provision of opportunities for student self-assessment.

The result was a new K–9 reporting policy, the key features of which were a move from event-style report cards to more regular communications with parents; the introduction of a ‘strength-based’ 4-point proficiency scale and descriptive feedback to replace existing grades; and increased emphasis on student self-assessment, particularly in relation to the core competencies. The policy, which was piloted from 2019, included ‘points of progress’ as occasions during the year for communicating with parents, as well as a ‘summary of progress’ in the form of an end-of-year written report.

Attempts to give substantive meaning to grades often rely on the use of graded adjectives. (This is also true of many ‘rubrics’ developed for ongoing classroom monitoring purposes.) The four levels of British Columbia’s proficiency scale hinge on distinctions between the adjectives ‘initial’, ‘partial’, ‘complete’, and ‘sophisticated’ (see Box 5.6). The usefulness of such scales for providing information about the points students have reached in their learning depends on accompanying explanations and examples of what students know, understand and can do at each proficiency level in an area of learning. Schools in British Columbia often provide parents with evidence of student attainment in the form of samples of student work, photographs, and videos on secure online portals, which may assist in illustrating proficiency levels.

Box 5.6 British Columbia: Proficiency Scale

Emerging	Developing	Proficient	Extending
The student demonstrates an initial understanding of the concepts and competencies relevant to the expected learning.	The student demonstrates a partial understanding of the concepts and competencies relevant to the expected learning.	The student demonstrates a complete understanding of the concepts and competencies relevant to the expected learning.	The student demonstrates a sophisticated understanding of the concepts and competencies relevant to the expected learning.

Note: British Columbia Ministry of Education, 2019, Draft K-9 student reporting policy. p. 4. Copyright 2019.

The pilot of British Columbia’s new reporting policy for Grades K–9 found that, while some parents and teachers preferred the earlier letter grades and percentages, most teachers reported students being more focused on where they were in their learning and on the identification of areas for further growth.

Thus, across these five jurisdictions, quite different approaches have been taken to communicating student learning success to parents and students themselves. In some jurisdictions—namely, British Columbia, Hong Kong, and Finland—efforts have been made to interpret grades substantively by developing criteria (or standards) for each available grade. However, these efforts tend to have been limited and sometimes have been motivated more by a desire to improve the consistency of teachers’ grades than to provide more informative communications about student learning (noting that both are important). More significantly, they have almost always been unrelated to efforts to support teachers’ day-to-day assessments and monitoring of learning, resulting in a general disconnect between the monitoring of learning and the communication of learning.

In Summary

Some of these jurisdictions have been working to reform how schools communicate student learning to parents and students. Efforts have been made to provide more descriptive reports that indicate the points students have reached in their learning (what they know, understand, and can do). Descriptions of student learning are being developed as alternatives to more traditional percentages and grades.

However, efforts to provide better information about student learning have had mixed success and have occurred largely in isolation from other efforts to support teachers' ongoing (formative) monitoring of learning.

Providing information about students' long-term progress

Documents describing assessment and reporting policies and processes in these jurisdictions refer to the desirability of monitoring and reporting the 'progress' students make. In some documents, the term 'progress' is used largely synonymously with student attainment or proficiency. It is common to include in descriptions of teachers' classroom responsibilities the monitoring of student progress. For example, teachers in Hong Kong are expected to oversee the 'learning progress' of students; teachers in Finland are expected to assess their students' 'progress' with continuous formative assessments; and teachers in Estonia are expected to give feedback about 'learner progress' as part of developmental discussions with students and parents. Many references to students' progress in their studies are predominantly references to how they are performing against current curriculum expectations rather than descriptions of how their levels of knowledge, skill, and understanding are increasing over time.

Reports of student learning are also sometimes referred to as 'progress reports' without obviously providing information about student growth/improvement over time. In some cases, these might be better described as 'regular' reports. For example, policy in British Columbia stipulates that 'progress reports for students in Grades 10 to 12 must, in relation to expected learning outcomes set out in the curriculum, contain (a) letter grades, and (b) where deemed to be appropriate by the teacher, principal, vice principal, or director of instruction, written reporting comments' (British Columbia Ministry of Education Governance and Legislation Branch, 2021). Although teachers' written comments may make reference to the progress a student is making, it seems likely that these 'progress' reports are little different from conventional student reports.

On the other hand, the Finnish national curriculum draws a distinction between assessments of proficiency and reports of student progress. In Finland, proficiency is to be assessed against the goals set for learning; progress is to be evaluated in relation to students' previous proficiency and earlier objectives. Thus, teachers are expected to monitor the progress students make in their learning over time, but there appears to be little guidance or support for this.

In British Columbia, school districts are required to provide a minimum of five reports describing student progress throughout the school year. These reports, or 'points of progress', are:

the meaningful, varied, and responsive ways in which teachers provide parents with information about how their child is progressing in their learning and what the child can do to extend their understanding. Points of progress may take many forms, including but not limited to digital portfolio posts, conferences, phone calls, written comments, and student goal setting and reflections on learning

(British Columbia Ministry of Education, 2019, p. 4).

British Columbia’s performance standards (Table 5.4) and general competency frameworks (Table 5.5) provide frames of reference against which student progress over time could be monitored.

A common impediment to monitoring and reporting students’ long-term progress in an area of learning is the absence of a frame of reference for doing this. This, in turn, is the result of assessment and reporting frameworks being specific to individual grades of school. Examples of grade-specific frameworks are British Columbia’s Grade 4 and Grade 7 scoring rubrics for Writing in its Foundation Skills Assessment (Box 5.7). Snapshot summaries of the rubrics only are shown here. These rubrics are used to assess the writing performances of students in each of these grades of school. Because these rubrics are grade-specific, it is not clear whether they could be used to make comparisons of writing quality between Grade 4 and Grade 7.

Box 5.7 British Columbia: Grade 4 and Grade 7 Scoring Rubrics, FCA Focused Writing

Grade 4 (snapshots only)				
0	1	2	3	4
Response does not have enough information to be scored; response contains very inappropriate language; or all work is erased or crossed out	Writing is brief, unorganized with few relative details. Simple language with weak sentence structure; ideas are often disjointed or illogical.	Writing has some sense of organization; few relevant details. Generally simple language and little sentence variety; ideas may be unevenly developed or list-like.	Writing is organized and developed with relevant supporting details. Capital shows growing control of written language; some sentence variety.	Writing ideas are focused, organized, and elaborated. Language flows smoothly with sentence variety; engages the reader with a sense of originality or individuality.

Grade 7 (snapshots only)				
0	1	2	3	4
Response does not have enough information to be scored; response contains very inappropriate language; or all work is erased or crossed out	Writing attempts to address the purpose; is brief, unorganized with few relevant details. Simple language with weak sentence structure; ideas are often disjointed or illogical.	Writing addresses the purpose; some sense of organization; few relevant details. Generally simple language and little sentence variety; ideas may be unevenly developed or list-like.	Writing clearly addresses the purpose; ideas are organized and developed with relevant supporting details. Capital shows growing control of written language; attempts sentence variety; may consider audience.	Writing addresses the purpose in an engaging way; ideas are focused, organized, and elaborated. Language flows smoothly with sentence variety; engages the reader with a sense of originality or individuality. Strong sense of audience.

Note: Adapted from “Foundation Skills Assessment Scoring Guide: Grades 4 and 7”, by British Columbia Ministry of Education, 2022 (<https://www2.gov.bc.ca/assets/gov/education/administration/kindergarten-to-grade-12/assessment/fsa-scoring-guide-en.pdf>). Copyright 2022 Province of British Columbia. Reprinted with permission.

Assessments of student writing globally show that the most advanced Grade 4 students have higher levels of proficiency in writing than the least advanced Grade 7 students. This raises the question of whether a single (longer) writing proficiency scale could be developed to monitor students’ long-term progress in writing across Grades 4, 5, 6 and 7. Such a scale would make explicit the nature of writing development and provide a frame of reference for establishing individuals’ levels of writing proficiency and for

monitoring their progress across these years of school. Frameworks for monitoring long-term learning and development are often not constructed in school education because of a traditional focus on grade-specific rubrics.

In Summary

Although these jurisdictions commonly refer to assessments of ‘progress’, and may describe report cards as ‘progress reports’, the focus of such assessments and reports is often on performance against curriculum goals rather than on monitoring increases in students’ proficiency levels over time. Nevertheless, some jurisdictions are making progress in supporting teachers’ assessments of the progress students make. A common impediment to monitoring long-term progress is the use of assessment and reporting frameworks specific to individual grades of school.

Collecting Better Information for System and School Decision-Making

All five of these jurisdictions have placed increasing emphasis on ensuring that every student learns successfully, and that no student leaves school inadequately prepared with the knowledge, skills, and attributes they are likely to require to participate fully in society and in workplaces of the future. These jurisdictions also recognize that many students are currently being left behind in schools, and that unacceptable gaps in learning and attainment often exist for particular student groups, including students from socioeconomically disadvantaged backgrounds, immigrants/refugees, non-native speakers, students living in rural and remote locations, and in some cases, boys.

Over recent decades, these systems have given greater priority to monitoring the extent to which all students are learning successfully, educational standards are being raised, and demographic achievement gaps are being closed (see Box 5.8). This has required reliable evidence of trends in student performance over time, progress in closing gaps, and success in identifying and addressing the needs of vulnerable students at risk of falling further behind in their learning. They have used this evidence to improve the planning and delivery of educational (and other) services; for resource allocation; to evaluate the effectiveness and impact of interventions, programs, and other system initiatives; to identify the need for capacity building; and to engage a wider group of stakeholders, including the public, in system-wide improvement efforts.

Most recognize that reliable evidence of performance and progress is required by a range of stakeholders, including governments, school system leaders, districts/municipalities, and individual schools. To be useful, this evidence not only must be reliable, it also must be timely, accessible and easily understood, address decision makers’ information needs and questions, and guide action to improve outcomes.

The five jurisdictions have sought dependable evidence to inform decision-making by developing and implementing their own system-wide assessment programs and/or by participating in international achievement surveys.

Collecting information for system monitoring and policy development

In designing and introducing system-wide assessment programs, these jurisdictions have involved stakeholders in ways that would have been rare under earlier, centralized system management arrangements. Teachers, parents, academics, and members of the public not only have been consulted, but sometimes have been closely involved in planning assessment programs and how results will be reported and used. For example, in the 1970s, British Columbia established a broad advisory committee

that established the framework for its new Provincial Learning Assessment Program (PLAP). Among its purposes, the program was to monitor student achievement over time, assist curriculum developers to improve the curriculum, provide information to allocate resources, and inform the public of strengths and weaknesses of the public school system (Mussio & Greer, 1980).

The programs these jurisdictions have introduced have been designed to assess student attainment at a few grade levels in first language (usually reading and writing) and mathematics/numeracy. In some jurisdictions, the grades at which assessments are undertaken correspond to the end of particular stages of school. Assessments of reading, writing and mathematics may also be supplemented by assessments of a small number of other subjects such as science and a second language (commonly English).

Most jurisdictions describe their assessment programs as addressing the goals of the school curriculum. In an attempt to provide coverage of the full set of curriculum goals, different samples of students may be assessed on different aspects of the curriculum. For example, a sample of students in Hong Kong undertakes the English-speaking sub-section of the territory-wide assessment, while others undertake the Chinese speaking and audiovisual sub-sections. Similarly, components of British Columbia's PLAP that involved costly scoring processes—such as writing and on-site physical education assessments—were based on samples only.

One key use of these assessment programs has been to monitor performance of the system as a whole. All five jurisdictions use their system-wide programs for this purpose. In Hong Kong, a report is produced showing overall student performance in the territory and areas of strength and weakness. The Korea Institute for Curriculum and Evaluation (KICE) produces a report showing national trends over time as well as the performances of subgroups, including gender and regional subgroups. Finland adopts a particularly 'light touch' approach to monitoring performance, assessing five to 10% of a grade every few years in Finnish/Swedish, as well as Grade 7 English in 2018, Grade 9 mathematics in 2020, and Grade 9 English in 2021. The Finnish Education Evaluation Centre (FINEEC) also collects information from principals, teachers, and students to construct indicators relating to 'working methods and teaching arrangements, educational resources, student evaluation and study attitudes of the pupils' (Finnish Education Evaluation Centre, 2020, para. 5). The main purpose of Finland's assessment program appears to be to monitor overall performance.

However, most of these jurisdictions' assessment programs are designed for much more than monitoring. British Columbia's Foundation Skills Assessment is designed to inform decisions about 'interventions, planning, resource allocation, curriculum, policy, and research'. It is designed to support decision-making not only at the level of the province, but also at the level of districts and schools. Students in Grades 4, 7, 10 and 12, their parents, and all staff in public schools also participate in an annual online satisfaction survey about their school experience. Most jurisdictions view their assessment programs as sources of evidence to inform policies and programs. In some cases, this requires special data collection exercises such as Finland's oversampling of schools that teach in Swedish to enable inferences to be drawn about performances in those schools. In other cases, it requires accompanying programs of research to better understand how policies and practices influence student learning.

Since 2015, the ministry in Estonia has commissioned the Education and Youth Board (previously named Foundation Innove) to conduct a satisfaction and school environment survey to accompany its national assessments. Each year, students from Grades 4, 8, and 11, and their parents, teachers, and school leaders participate in the survey, with schools also receiving school-level data on trends and performance in comparison with similar schools. The survey includes information on motivational factors, and social and physical aspects of the school environment. The aim is to understand influences on student achievement at both the national and school levels. Finland gathers similar data through its School Health Promotion Study, which involved a survey of 300,000 students in Grades 4 and 5, Grades 8 and 9, and in the first two years of upper secondary school. And Korea surveys students, teachers, and parents as part of its national assessment to identify factors affecting student and school achievement. Data are collected on factors such

as attitude to school, involvement in school decision-making, and satisfaction with educational facilities, to derive possible implications for national policies.

In Summary

All five jurisdictions have developed and implemented system-wide assessment programs to assess learning at a few grades in students' first language, mathematics and occasionally other subjects. Most have used this information to monitor jurisdiction-wide achievement levels, trends over time, and progress in closing achievement gaps. Data are used to plan local education service delivery, allocate resources, evaluate programs and initiatives, and report on the jurisdiction's performance.

Providing information for local decision-making

For the purposes of system-level monitoring and policy making, some of these jurisdictions have assessed samples of students. Although it has sometimes been possible to provide meaningful regional/district data based on system-wide samples, it has generally not been possible to provide school communities with information about the performances of individual schools (sampled schools in Finland have been able to compare their results with national performances, although there are questions about the representativeness of the samples). And in some jurisdictions, schools are able to choose to participate in sample-based programs—without being included in the sample—for the purposes of benchmarking themselves against system norms. For example, in Estonia, schools commonly assess more students than are sampled because they value the feedback. In the late 1970s, in response to pressure from principals, British Columbia began providing school-level results and, in 2000, in response to pressure from parents, the province moved from sample-based assessments to the assessment of all students in Grades 4, 7 and 10. Similarly, Korea moved from sample-based assessments to the assessment of all students in Grades 6, 9 and 11 in 2008. British Columbia's decision to assess all students in Grades 4 and 7 in reading, writing and numeracy through its new Foundation Skills Assessment was also a response to parents' calls for better information about how students were performing in these basic skills.

School systems that have assessed entire cohorts of students—as opposed to student samples—have used the resulting data to support decision-making at the level of the jurisdiction, individual regions/districts, and local communities and schools, and to provide focused support at these levels. For example, British Columbia has assessed all kindergarten students using its Early Development Instrument (EDI) and has used the resulting data to plan and deliver services to students and their families throughout the province. The focus of the EDI, which gathers information about physical health and well-being, language and cognitive development, social competence, emotional maturity, and communication skills and general knowledge, is not on comparing students, teachers, or schools, but on informing policy development and province-wide decision-making and service delivery. Similarly, Korea and Hong Kong have used data from their system-wide assessment programs to provide targeted support to individual schools where it is required.

Through their system-wide assessment programs, these jurisdictions have provided districts and individual schools with information to inform their own planning and improvement processes. British Columbia provides this information on the Information to Support Student Learning website. In Hong Kong, each school receives a confidential school report, but no information is provided on the performances of individual students.

In schools in Korea and British Columbia, and in Estonian schools that have participated in the national assessment program, individual student results have been provided to teachers for use in classroom

teaching and learning. In British Columbia, each student's performance on the Foundation Skills Assessment is reported as a score and as 'emerging', 'on track' or 'extending'. The FSA is now administered in the autumn, rather than the spring, so that teachers have access to results earlier in the school year to guide their teaching. Teachers combine these results with other classroom information to monitor the progress of individual students. In Korea, each student's performance in each subject has been reported as 'less than basic', 'basic', 'average' or 'excellent' and results have been used for diagnosing achievement levels and providing students with opportunities for supplementation if they do not meet basic education standards.

However, there have been growing concerns about unintended consequences of providing results from system-wide assessment programs for school and teacher use. In Korea, one in two schools has reported using results of the national assessment to allocate students to classes. In British Columbia, external bodies have accessed school results and compared schools in public league tables, leading the British Columbia Teachers' Federation to actively campaign against the FSA. In Hong Kong, parents have expressed concern about the amount of time schools spend preparing students for the Territory-wide System Assessment (TSA), and there are concerns that the assessments are narrowing the focus of teaching and learning.

Initial responses to these concerns have been to attempt to minimize unintended uses and consequences. For example, Estonia does not announce the additional Grade 6 subject to be included in its national assessment because it does not want schools and students preparing for it. The Hong Kong Examinations and Assessment Authority advises schools and students against preparing for the TSA, reiterates that comparisons of schools and students should not be made, and does not provide preparation materials. British Columbia has updated its assessment program to make it more compatible with the objectives of its new curriculum, including by adding un-assessed collaboration and self-reflection activities.

More recent responses have been to change the assessment programs themselves. Hong Kong has changed its Grade 3 assessments to make them sample-based and now conducts Grade 6 assessments only every second year. Schools wishing to participate at Grade 3 are able to do so and to receive confidential school reports. In 2013, in response to concerns about over-testing, Korea eliminated Grade 6 tests and reduced the number of tested subjects in Grades 9 and 11, and in 2017 returned to sample-based assessments only (3% of students sampled) and reintroduced science and social studies (1.5% of Grade 9 students sampled). In British Columbia, opposition by the Teachers' Federation has contributed to a decline in participation rates, with about a quarter of students in each of Grades 4 and 7 now not taking the tests.

As a result, some original purposes of these system-wide assessment programs are now not being met. In British Columbia, the Foundation Skills Assessment was a reliable measure for informing the school system and the public about educational standards across the province. Given the significantly reduced participation rates, its reliability for this purpose is now being questioned. In Hong Kong, the Territory-wide System Assessment was intended originally to provide information about the extent to which students in Grades 3, 6, and 9 were achieving 'basic competence' in Chinese, English, and mathematics. This information is now not available for many students.

In Summary

Some jurisdictions have used their system-wide assessment programs to provide information to school districts, individual schools, and teachers. This has required the assessment of entire cohorts of students rather than samples. In some cases, this has been in response to requests from school leaders and parents for better information about school and student performances. However, the availability of school and student data has led to a range of unintended uses and consequences, resulting in most of these jurisdictions scaling back or eliminating the testing of entire student cohorts.

Box 5.8 Collecting Better Information for System and School Decision-Making: Jurisdiction Summaries

British Columbia uses an Early Development Instrument (EDI), administered by kindergarten teachers, to assess all children in five areas of development to inform provincial and local integrated service delivery, especially to vulnerable children. From 1976, a Provincial Learning Assessment Program (PLAP) was introduced to assess a sample of students in Grades 4, 8, and 12, primarily in reading, writing, and mathematics. Provincial and district results were reported, but there was no student reporting. In response to principal requests, school results were produced. This was replaced by the Foundation Skills Assessment (FSA) in 2000, which, responding to parent requests for better information, assessed and provided results for all students in reading, writing, and numeracy in Grades 4 and 7 (and initially 10). Opposition by the teacher union has seen participation rates drop to 75% (in 2019).

Estonia introduced processes for monitoring outcomes of the school system in the mid-1990s. Originally, these included sample-based tests in Estonian and mathematics in Grades 3 and 6 (and in one additional, unannounced subject in Grade 6). These tests were administered to 10% of the population, but many schools gave the tests to all students to benchmark themselves against national norms. The tests were for national (and school) monitoring and decision-making and not for decisions about individual students. Results on Grade 9 and Grade 12 graduation examinations are also used to monitor performance and inform policy making. Since 2015, the Education and Youth Board has conducted a Satisfaction and School Environment Survey to provide teachers, schools, local governments, and education policy makers with information about local effectiveness, stakeholder perceptions, and needs.

Finland in the 1970s had a centralized school inspection system. Sample-based surveys of achievement are conducted by the Finnish Education Evaluation Centre (FINEEC) approximately every three years in Finnish/Swedish as the language of instruction, mathematics, and a foreign language (usually English), mainly in Grade 9. There are longer intervals between tests in other subjects, including the arts, music, physical education, and home economics. Tests are administered to 5% to 10% of the population and are designed to provide information on the attainment of national goals. The ability to monitor trends over time is limited, but FINEEC has commenced longitudinal surveys of student performance in mathematics. Information is also collected from principals, teachers and students 'on working methods and teaching arrangements, educational resources, student evaluation and study attitudes of the pupils'.

Hong Kong introduced its Territory-wide System Assessment (TSA) in 2004 to provide schools with objective data on whether students in Grades 3, 6, and 9 had achieved 'basic competence' in Chinese, English, and mathematics. Results for the territory are reported publicly and used in policy making and to provide focused support to individual schools. School results are provided only to schools, and student results are not reported. There has been increasing resistance to the TSA from parent groups, arising from concerns over teaching to the test and its potential for misuse. As a result, since 2012, Grade 6 students have been assessed every second year, and since 2018, only a sample of Grade 3 students have been assessed. A review of school sponsoring bodies (SSBs), principals, teachers, and parents in 2015 concluded that the TSA provided useful feedback at territory and school levels.

Box 5.8 Collecting Better Information for System and School Decision-Making: Jurisdiction Summaries (*continued*)

Korea conducts an annual National Assessment of Educational Achievement (NAEA) to assess students' achievement of curriculum goals. The purpose is to inform teaching and learning, provide additional support to schools as required, and inform policy making by the ministry. Originally the NAEA was sample-based, but from 2008, was administered to all students in Grades 6, 9, and 11 in Korean, mathematics, social studies, science, and English. Concern over test pressure resulted in the elimination of testing in Grade 6; testing in only Korean, mathematics, and English; and from 2017, a return to sample-based testing with the reintroduction of social studies and science. NAEA includes surveys of students, teachers, and principals to gather data on factors that may influence student achievement, such as time spent reading, use of technology outside school, and teaching practices.

Learning from participation in international surveys

These five jurisdictions have all participated in international achievement surveys, some for the past half century. These surveys include the OECD's Programme for International Student Assessment (PISA) and the Trends in International Mathematics and Science Study (TIMSS) and Progress in International Reading Literacy Study (PIRLS) of the International Association for the Evaluation of Educational Achievement. Participation has provided jurisdictions with opportunities to benchmark achievement levels against performances in other school systems; monitor trends in performance over time; study changes in the performances of significant student subgroups; evaluate the impact of policy decisions and reforms; and review and redesign jurisdiction practices, particularly in the areas of curriculum and assessment.

The ability to benchmark against international performances has raised awareness in these jurisdictions of how well their students are performing. For example, students in Finland performed below international averages in the 1970s and 1980s, raising concerns that the introduction of the comprehensive school had had a levelling but lowering impact. Finland's performance in PISA in 2000 assuaged this concern and led to increased self-reflection—as well as international reflection—on strengths of the Finnish system. When Estonia participated in TIMSS in 2003 and PISA in 2006, there was national surprise at how well students performed. This led to high levels of public interest, as well as analyses of the factors that may have produced this high performance (Tire, 2021). The ability to benchmark also enabled other observations, such as the identification of areas of relative strength and weakness (for example, Estonia recognized that science was an area of relative strength); comparison with other jurisdictions of special interest (for example, other Nordic countries, English-speaking countries, East-Asian countries); the analysis and international comparison of variability in student performance, both within and between schools; and the analysis and comparison of the proportions of low-performing students failing to reach baseline levels of proficiency.

British Columbia also benchmarks Grade 8 students' performances in reading, mathematics, and science against performances in other Canadian provinces through the Pan-Canadian Assessment Program (PCAP). Assessments are administered every three years to a sample of students, with the major domain changing with each cycle. Accompanying questionnaires provide contextual information to assist in interpretation and policy making.

With the availability of long-term trend data, these jurisdictions have also taken the opportunity to investigate and reflect on changes in students' attainment levels over time. Finland saw a steady decline in the reading, mathematical and scientific literacy levels of 15-year-olds between 2006 and 2018. Other jurisdictions also saw declines, particularly between 2012 and 2018. For example, the decline in science in Hong Kong was among the steepest declines observed among countries and economies that participate in PISA. In Finland, analyses of that jurisdiction's decline in reading literacy revealed that the proportion of excellent readers was unchanged from 2009 to 2018, but the proportion of weak readers significantly increased, with 14% of students in 2018 not achieving the reading level required for further studies and life as a full member of society (Ahonen, 2021). There has been considerable discussion and speculation concerning these declines in student performance.

These jurisdictions' analyses of performance in international achievement surveys include their analyses of the performances of significant student subgroups. In some jurisdictions, subgroups are oversampled to provide meaningful performance data. There has been a particular interest in the performance of students of differing immigrant status, socioeconomic backgrounds, genders, geographical locations, and school types. These analyses have sometimes raised policy questions. For example, in Finland, mathematics levels in Finnish-speaking schools have declined, but levels in Swedish-speaking schools are unchanged. In Estonia, students in Russian-speaking schools perform well on basic skills and knowledge but are less successful than students in Estonian-speaking schools in applying their knowledge to real-life situations.

These jurisdictions not only have higher average levels of performance internationally, but generally also have smaller differences related to socioeconomic background. For example, socioeconomic status explains only 5% of the variance in reading performance in Hong Kong, compared to 12% for the OECD as a whole. However, this has been changing over time in some jurisdictions. In Korea, the relationship between performance and socioeconomic background has strengthened. This has also been the case in Finland since 2009.

Gender differences have also been monitored closely. In some jurisdictions, including Estonia, gender gaps have been decreasing. In others, including Korea, they have been increasing (due in part to improvements in girls' performances not being matched by similar improvements for boys). In Finland, gender gaps in reading literacy and scientific literacy have been among the largest in countries participating in PISA and there has been particular concern over the low performance of boys in smaller and more remote communities. (In 2018, 63% of boys in Finland reported that they read only if they have to.)

Participation in international achievement surveys has also informed policy making in these five jurisdictions, although this has varied across jurisdictions. A 2012 study concluded that, among all participating countries and economies, PISA had the greatest impact on educational policy making in Korea (Breakspear, 2012). This included Korea's identification of strategies for improving student engagement and attitudes. Hong Kong reported that PISA was used to evaluate the effectiveness of its large-scale policy reforms. On the other hand, although many school systems looked to Finland for policy guidance following its very high performance in 2000, PISA was reported to have been 'not very' influential in informing Finland's own policy-making processes, although there has been considerable interest within Finland in PISA and TIMSS trend data.

International achievement surveys have also served as 'best practice' models in curriculum development and assessment. The PISA framework was widely discussed by curriculum developers in Hong Kong who concluded that the Hong Kong curriculum was already well aligned with the PISA emphasis on the application of knowledge in meaningful contexts. In Canada, the Pan-Canadian Assessment Program was redesigned in 2007 to reflect key features of PISA assessments. And in Korea, efforts were made to incorporate PISA competencies into the national curriculum (for example, the revised science standards) and that country's national assessment processes (OECD, 2014).



In Summary

These five jurisdictions all participate in international achievement surveys and use them as opportunities to benchmark students' achievements against performances in other school systems; to monitor trends in student performance over time; to study changes in the performances of significant student subgroups; to evaluate the impact of policy decisions and reforms; and to review and redesign jurisdiction practices, particularly in the areas of curriculum and assessment, where international surveys are often viewed as 'best practice' models.

Reducing Adverse Effects of High-Stakes Assessments

As well as being undertaken to inform decision-making by teachers, students themselves, parents, school leaders, system leaders, and governments in the interests of improving learning, assessments are also sometimes undertaken or used to manage competitions for entry into selective schools, education tracks, or the next stages of learning. The extent of student competition of this kind varies considerably across these five jurisdictions, but where competition does exist, it occurs at major transition points: on entry to primary school; lower secondary school; upper secondary school; and post-school education and training. Competitions for limited places have significant consequences for students because they determine whether they are able to enter the school, track, or program to which they (and their families) aspire. In this sense, these uses of assessment are 'high-stakes' for students and their families.

It is sometimes believed in these jurisdictions that competitions and their associated high-stakes assessments are useful external motivators of student effort and learning. Students learn because they are in a competition with other students and there are obvious consequences if they perform less well than those with whom they are competing. Another perceived benefit is that high-stakes assessments make explicit what teachers should teach and students should learn if students are to succeed. However, these jurisdictions also recognize that competitions for entry can have less desirable consequences for families, students, and their learning.

These less desirable consequences include the over-testing of students, sometimes including preschool children. There has been concern in these jurisdictions about the levels of test anxiety students experience as a result of high-stakes selection tests. Parental expectations often add to this pressure. British Columbia observed that students were avoiding upper secondary courses that included external, high-stakes examinations. Over recent decades, most of these jurisdictions have worked to reduce the amount of selection testing in their schools. For example, Hong Kong eliminated tests at the transition to lower secondary school and also for entry to upper secondary school; Estonia drafted an Act in 2019 to eliminate its examinations at the end of lower secondary school, but this was not supported in the parliament or in society more generally and did not proceed; and British Columbia scaled back and eventually eliminated its end-of-school examinations. Jurisdictions have also sometimes imposed restrictions on schools' abilities to develop and use their own selection tests.

The decision to eliminate some selection tests has coincided with an increase in the proportion of students wishing to continue to the next phase of their learning. For example, Hong Kong realized that its earlier Certificate of Education Examination (HKCEE) was functioning as a barrier to students progressing to upper secondary school. The removal of that barrier led to a significant increase in participation rates in the final years of school.

There have also been concerns about the consequences of schools being able to select the students they admit. This practice has maintained the status of 'elite' schools—for example through entrance

examinations to Grade 1 in Estonia, and through principals' abilities to choose the students they will admit in some other jurisdictions. In Hong Kong, steps have been taken to reduce the proportion of students that schools are able to choose, to restrict choice to within the same school district, and to randomly allocate other places centrally.

Another concern in these jurisdictions has been with the impact selection testing can have on teaching and learning. Because selection testing must be seen to be fair and reliable, the content of selection tests tends to focus on what can be reliably measured. However, this can distort the broader intentions of the school curriculum. In response, these jurisdictions have also broadened the kinds of evidence on which selection decisions are made. Examples include the requirement in Estonia that students complete a 'creative work' as part of their successful transition to upper secondary school, and the requirement in British Columbia that students complete a 'capstone project' as part of their successful completion of secondary school.

In these and other ways, these five jurisdictions have been addressing the unintended consequences of high-stakes student selection, both at the point of entry to each stage of school, and at the point of entry to post-school study.

Reforming student selection processes

For some students in these jurisdictions, competition for entry begins before Grade 1. In Estonia, although the Basic Schools and Upper Secondary Schools Act requires schools to create places for students based on their place of residence, the cities of Tallinn and Tartu have a small number of 'elite' public primary schools that accept students from across the city and so are required to manage competitions for entry. These competitions are intense; in 2020, only one in 10 children applying for entry was accepted into these schools. The five most prestigious elite schools in Tallinn have entrance examinations that they are permitted to conduct because they specialize in subjects such as language, mathematics, and STEM. Also important in the selection process are schools' interviews with parents to establish their ability and willingness to actively engage in and support their children's learning.

In Hong Kong, too, schools' abilities to select the students they admit to Grade 1 were seen to be creating and consolidating a group of 'elite' schools. Prior to 2001, principals could select 65% of their intake, with the other 35% allocated by the education department based on where students resided. This led to concerns that less advantaged families had less access to elite schools, and that more advantaged and more able students were being concentrated in these schools. In 2001, the percentage the principal could select was reduced to 20% and the majority of Grade 1 children were centrally computer-allocated to schools.

Even more intense competition occurs for entry into lower secondary schools in Hong Kong. Before 2001, all students were administered a national Academic Aptitude Test and, based on their test scores, assigned to one of five 'bands'. Students in the highest band (Band 1) had first priority in their choice of a secondary school. Schools with a majority of Band 1 students became known as Band 1 schools. This led to concerns about the creation of elite secondary schools, the concentration of more able students in these schools, and the consequent labelling of students and schools. In response, the Academic Aptitude Test was abolished in favour of primary schools' (Grades 5 and 6) assessments calibrated against performances on a scaling test; the number of bands was reduced to three; and the Bureau of Education developed the Secondary School Places Allocation (SSPA) System under which no more than 30% of places are allocated by the school, and most are centrally allocated.

In some jurisdictions, the transition to upper secondary school is also a major decision point. This is particularly true in school systems that require students to choose between a general academic track and a vocational track, and when students compete for limited upper secondary places or for entry into more prestigious schools. Until recently, Hong Kong has conducted examinations at this transition point. Estonia continues with an examination to graduate from lower secondary school. In Finland, this is also

a major transition point, but most Finnish students are selected into academic and vocational schools on the basis of teachers' grades, with schools being required to rank and select on the basis of grade point average (GPA). In some special schools, such as the High School of Arts, selection may also be based on special tests, portfolios, video performances, and teachers'/coaches' recommendations. Entry into Finnish upper secondary schools is competitive, with each student being able to apply to five schools across the country. Similarly, students in Korea and British Columbia are admitted to upper secondary schools without entrance examinations, with the exception of students in Korea wishing to attend specialized or vocational high schools.

In Estonia, the final examination at this transition point is referred to as a 'graduation' examination. It is used to assess what students have attained by the end of compulsory schooling (Grade 9), and as a source of nationally comparable data for judging the value being added by schools and to identify schools requiring additional support. But it is also a hurdle that students must clear for entry into the upper secondary school; students taking the examination must meet a 'satisfactory' standard in each of Estonian, mathematics, and one other subject of their choosing. A further requirement is the completion of a creative work, which is usually completed in Grade 8. Although there have been concerns about student stress levels associated with this examination, and consideration was given in 2019 to its abolition, the Grade 9 graduation examination continues to be a feature of the Estonian school system.

In addition to this national graduation examination, upper secondary schools in Estonia have their own selection processes, which include interviews and, for about half of upper secondary schools, separate entrance examinations. These examinations, usually in Estonian, mathematics, and a foreign language, are more difficult than the graduation examination and are held earlier in the school year (March–April). Students are particularly focused on preparing for these high-stakes entrance examinations.

In Hong Kong, the Hong Kong Certificate of Education Examination (HKCEE) served a similar function, managing intense competition for entry into upper secondary schools, until it was abolished in 2009. Prior to its removal, slightly less than half of students taking this examination were admitted to the upper secondary school. With its removal, six years of secondary schooling became accessible to all students in Hong Kong.



In Summary

Assessments are also sometimes used to manage competition for entry into selective schools, education tracks, or the next stages of learning. Although the necessity of selection in some contexts is acknowledged in these jurisdictions, there has been concern about over-testing, unnecessary barriers to student progress, the maintenance of 'elite' schools to which disadvantaged families have less access, and the narrowing impact of high-stakes selection testing on student learning. Responses have included removing some selection tests, placing restrictions on schools' abilities to choose the students they admit, and broadening what is assessed at key transition points.

Minimizing the impact of university admissions testing

Assessment at the end of secondary school historically was designed to admit a small percentage of each age cohort into universities. Oral examinations—for example, for entry to the University of Helsinki in the 1870s—eventually were replaced by written examinations prepared by universities. In Finland, these matriculation examinations were replaced by university entrance examinations in the mid-1950s as competition for university places grew. In Hong Kong, until the 1960s there was only one university which admitted between 100 and 200 students each year by written examination. Such examinations determined

in large measure what was taught in the upper secondary school. They may also have provided information about how well schools were preparing students for university, but their overwhelming purpose was to ensure that the most able students were selected for entry, and their content reflected the disciplines of the academy.

As a growing proportion of students participated in upper secondary education, the purposes of this stage of schooling evolved from preparing only some students for university to providing most students with a broad preparation for further learning, life, and work. An increasing proportion of students no longer aspired to post-school academic study but were more interested in beginning their preparation for future careers and life beyond school. School systems responded to these changes by providing broader and more varied upper secondary curricula, increasing opportunities for individuals to explore and pursue their individual strengths and interests, and using a wider variety of methods for assessing and documenting student learning and achievement.

These general trends have been reflected in all five jurisdictions. In most, the primary role of assessment at the end of secondary school has been transformed from selection for university entry to the assessment and communication of students' levels of attainment—that is, what they know, understand and can do, and possibly the personal attributes they have developed, upon completion of their schooling. As a result, control of assessment has moved from universities or university agencies to bodies responsible for assessing and reporting school achievement. For example, when Estonia introduced upper secondary examinations for school graduation in 1997, universities decided to accept them as entrance examinations.

However, if the vision in these five jurisdictions is for an assessment system designed primarily to document and communicate what students know, understand, and can do upon completion of school, in a broad range of learning and development, with sufficient reliability to make meaningful comparisons across the school system, then these jurisdictions are at very different points in their progress toward that vision.

In Korea, a single test for university entry—the College Scholastic Ability Test (CSAT)—dominates learning in upper secondary schools. All students, whether in academic or vocational schools, and whether applying to a junior college, polytechnic college or university are required to complete the five components of the CSAT. This results in highly test-driven student learning and highly test-based admissions. To maximize scores on the CSAT, many students turn to private tutoring in hagwons (also referred to as the 'shadow' education sector in Korea). Competition for high-status university places commonly leads to student stress and exhaustion, constrained social-emotional development, and sleep deprivation (T. Bentley, personal communication, 29 September, 2020). Efforts have been made to address these issues by broadening the range of criteria used in university admissions through the 2013 University Entrance Simplification Policy, and by introducing an early admissions process based on school records of academic performance and extracurricular activities. However, these have had limited impact, and in response to public concerns about the unfairness of early admission processes, the ministry announced in 2018 that the percentage of students admitted to universities solely on CSAT scores would be increased from 22% to 30%.

British Columbia responded to concerns that its provincial examinations were distorting the intentions of the upper secondary curriculum by eliminating subject examinations entirely and replacing them with a numeracy test in Grade 10 and literacy tests in Grades 10 and 12. Upper secondary subject examinations were first abolished in the 1970s, reintroduced in the 1980s following concerns about declining standards, and then abolished again by 2020. Student performance is now assessed by teachers for the purposes of the British Columbia Certificate of Graduation (the Dogwood Diploma) and is reported using percentages and related letter grades on a 6-point scale, from 'Fail' to 'Excellent'. Performances on the provincial literacy and numeracy assessments are reported on a 4-point scale, and students also complete a teacher-assessed career education capstone project.

The removal of examinations in British Columbia was possible because of growing access to regional postsecondary institutions that offer a range of academic and technical/vocational programs and that provide bridging opportunities with universities and other postsecondary institutions in the province. The shift was also influenced by a decision by the research universities not to require examination results, to select on the basis of schools' grades, and to look for other ways of selecting students.

However, significant concerns remain about the consistency of teachers' assessments across schools and the lack of reliable data for monitoring the performances of particular groups of students, and reports of universities elsewhere in Canada downgrading school results from British Columbia. It is unclear whether postsecondary institutions will use results from the new Grade 12 literacy assessment as part of their admissions processes.

In Estonia, the upper secondary National School Leaving Examination is an assessment of student achievement in the final years of school that is also used in university admissions. Over time, there has been concern over the examination burden on students and also the difficulty of the national examinations. In response, the number of examined subjects has been steadily reduced. This includes a reduction from five to three subjects (Estonian, mathematics, and a foreign language) in 2014. Currently, students also complete an 'inquiry project' involving research, creative, or practical work, and a school-based examination. Rankings of schools on national examinations are published in the media, with schools that are highly selective at the point of entry to upper secondary school topping the rankings.

Universities in Estonia have used results on national school examinations in various ways, including basing selection into highly competitive courses on examination results alone, and setting threshold scores in particular school subjects (for example, 60 or 75 out of 100 in mathematics). Concerns over the numbers of students not completing their university courses have resulted in efforts to select students based on their motivation for study. As a result, national examinations have played a somewhat reduced role in admissions processes in recent years.

Finland's upper secondary examination assesses mastery of the school curriculum and graduation is based on students' examination performances. Students also receive grades from schools and there are rules concerning the number of passing grades required for graduation. Until 2017, these school grades played a role in selection into universities of applied sciences. The upper secondary examination provides crucial information for student selection into universities, which is highly competitive in the case of research universities, but less so for entry into universities of applied sciences. Students are required to take an examination in their first language (Finnish, Swedish or Sámi) and in three other subjects. In parallel, universities in Finland continue to develop entrance examinations, but these are used mainly for mature-age students, vocational students with no upper secondary examination results, and to provide other students with a 'second chance'. Since 2018, universities have been required to base at least 60% of student admissions solely on the upper secondary examination rather than on university entrance examinations.

In Hong Kong, the Diploma of Secondary Education Examination (HKDSE) was introduced in 2012 to certify student achievement in the upper secondary school. The examination was intended to address broader learning outcomes than its predecessor and so reduce the amount of rote learning. It also made provision for school-based assessments. Slightly more than half of all subjects provide a written examination combined with school-based assessments, which contribute between 15% and 40% of a student's result, depending on the subject. However, in practice, the examination is used to manage intense competition for entry to Hong Kong's universities, to which about 20% of examination takers are admitted. And school-based assessments, which were intended to provide information about learning not readily assessed by written examination, are sometimes based on tests that require rote learning. Although the intention in Hong Kong is to promote school-based curriculum development, in reality examination syllabi tend to dictate what is learnt in upper secondary schools (Cheng, 2017).

To enter university, students generally must meet threshold levels of achievement in Chinese (level 3 on a 5-point scale), English (level 3), mathematics (level 2), and citizenship and social development (level 2). Students also take examinations in two to four elective subjects. But given the high level of competition, meeting thresholds does not guarantee entry. Because preparation for the HKDSE occupies so much student time, limiting opportunities for other intended learning experiences, reform of admissions processes is seen by some as a high priority in Hong Kong. However, most university courses continue to select on the basis of examination scores and are wary about using other evidence such as interviews and portfolios of evidence.

Thus, a general trend in these five jurisdictions has seen tests and examinations designed originally for student selection into universities replaced by assessments of the extent to which students have achieved the broad intentions of the upper secondary curriculum. However, in some jurisdictions—especially Korea, and to a lesser extent Hong Kong—assessments at the end of school continue to function primarily as selection mechanisms. In jurisdictions that have been more successful in using end-of-school assessments primarily to document what students know, understand, and can do upon completion of school, the continuing use of assessments for selection has raised concerns about stress and the narrowing of learning. Responses have included abolishing external subject examinations (British Columbia) and greatly reducing their number (Estonia). However, a consequence has been reduced confidence in the comparability of student results and the differential valuing of school subjects.

In Summary

In most of these jurisdictions, assessment at the end of secondary school is no longer primarily for admission to university, but to establish and document what students know, understand, and can do upon completion of their schooling. The objective is to provide information about the range of student learning and development promoted by upper secondary curricula, with sufficient reliability to make meaningful comparisons across the school system. These jurisdictions are at very different points in their progress toward that objective.

Building a World-Class Assessment System

This chapter has considered assessment practices in these five high-performing jurisdictions. Although there are differences among these jurisdictions, the analysis of existing assessment arrangements and the ways in which they are now being redeveloped suggests that a world-class assessment system would have a number of features.

Foremost among these features would be recognition that the fundamental purpose of assessment is to establish and understand the points learners have reached in their learning. In practice, educational assessments are made in relation to specific areas or aspects of learning and generally involve drawing inferences about what students know, understand, and can do, and possibly levels of personal attributes such as attitudes and values. Conclusions about the points learners have reached in their learning (either as individuals or groups) provide crucial input to educational decision-making, whether by teachers, parents, principals, system leaders, governments, or learners themselves.

The use of assessment to understand student learning can be contrasted with the use of assessment to judge learning. Educational assessment traditionally has been a process of judging how well students have learnt what they have been taught. This has usually involved determining the proportion of taught content a student can demonstrate, and then communicating that as a percentage, score or grade. However, in these jurisdictions, there has been a long-term trend to give less priority to assessments for

judging and grading, and more priority to assessments for understanding and acting. This has been true at the classroom level, and also at the level of school systems and government policy making. The aim has been to understand where learners are in their learning to inform effective action.

The observations in this chapter suggest that, in a world-class assessment system, inferences about where students are in their learning would be made in relation to the rich intentions of the school curriculum. They would be based on students' abilities to recall information and apply taught routines but would include much more than this. They would also draw on evidence of the depth of students' conceptual understandings, as reflected in their abilities to transfer and apply important concepts, principles, and methods to a range of relevant contexts and issues. And they would draw on evidence of students' abilities to reason about the content of the learning area, to think critically and creatively about problems, to make effective uses of appropriate technologies, and to communicate thoughts and ideas relevant to the area. A world-class assessment system would be based on an understanding that progress in an area of learning involves the development of interrelated knowledge, understandings, thinking skills, competencies, and attributes, and that reliable evidence of this range of curriculum intentions is required to establish where students are in their learning and to monitor student progress over time.

The process of establishing and understanding the points learners have reached in an area of learning depends on an underlying intention of progress. In a world-class learning system, the curriculum would be designed to promote long-term student progress. Progress (or growth) includes the development of increasingly sophisticated and connected knowledge, deeper conceptual understandings, higher levels of skill, and increasing competencies and attributes. In most areas of the school curriculum, intended progress of these kinds occurs across multiple years of school, sometimes throughout the years of school. The curriculum makes this intended progress explicit, including by sequencing content to reflect the progressive and cumulative nature of learning, ensuring that new learning builds on prior and prerequisite learning, and laying the foundations for future learning. Although schooling is divided arbitrarily into time periods, including semesters, school years, and stages of school, and significant disruptions to learning can occur at transitions between time periods, a world-class learning system would be built on the concept of learning as continuous, ongoing, and potentially lifelong. In such a system, assessments would be designed to provide information about where students were in their long-term progress.

This approach can be contrasted with the traditional approach to assessment, which begins with the specification of a set of objectives to be taught and learnt in a defined time period. Assessments are undertaken for the purposes of judging and grading students on the extent to which they can demonstrate these specified objectives by the end of the allotted time. Teachers and students then make a fresh start on the next curriculum and its objectives, and the whole process is repeated. The disadvantages of this approach are that it can result in 'flat' curricula in which all objectives appear equally important; curricula of this kind often become crowded with objectives focused on factual and procedural knowledge; learning becomes heavily time-bound; the sense of progression in learning is often lost; and the grades this approach produces do not provide a basis for monitoring students' long-term development. In a world-class assessment system, assessments would be designed to establish students' current levels of attainment and to monitor their progress, whenever and wherever learning occurred.

As the intentions of the school curriculum have been broadened to give greater emphasis to the development of student thinking, deeper conceptual understanding, and skills in applying knowledge, the kinds of evidence necessary to draw meaningful inferences about student learning have also broadened. In these jurisdictions, assessments of what students know are increasingly being complemented by assessments of what they can do with what they know. Factual and procedural knowledge are being assessed in combination with students' abilities to apply their understandings and skills to unfamiliar contexts and non-routine problems, which may require students to draw on learning from different school subjects. Evidence of student learning is also being gathered from investigative projects and extracurricular activities. In a world-class assessment system, the use of a broad range of evidence would

be a feature of assessment at all levels—from teachers’ day-to-day classroom assessments to more formal assessments for monitoring and certification purposes.

This chapter also observed that some of these jurisdictions are making efforts to provide more substantive interpretations of the stages that students have reached in their learning. Their objective is to describe and illustrate what students know and can do, rather than to communicate the outcomes of learning merely as an uninterpreted percentage or grade. The approach they are adopting is to construct a sequence of described proficiency levels in an area of learning and to use these levels as the frame of reference for establishing and reporting the points students have reached in their learning. These frames of reference are being used for classroom monitoring purposes, but also for reporting results on end-of-school examinations, and national and international surveys of student achievement. And with levels of attainment substantively interpreted in this way, it is possible to set performance standards (for example, to identify the level of reading proficiency expected of all students by the end of primary school).

The observations in this chapter suggest that a world-class assessment system would display all the above features. It would be designed to provide evidence of student learning and development against the rich intentions of the school curriculum. It would be designed to provide information about the points students had reached in their long-term development of these intentions. It would require and use a broad range of evidence to draw inferences about the points students had reached. And it would interpret students’ levels of attainment substantively, describing and illustrating what students at those levels typically know, understand, and can do. Importantly, these features would be common to all assessments of learning, regardless of the level at which they are made (classroom, school, system) or their intended uses. These shared features and intentions would make the jurisdiction’s assessment processes a ‘system’.

At the level of the classroom, assessments would be undertaken to establish where students are in their learning to inform next steps in teaching. Establishing the points students have reached in their learning might include detailed diagnoses of what individuals know and can do, including the identification of misunderstandings, errors, and gaps in learning. An important purpose would be to provide feedback to students to support their further learning and to encourage self-monitoring. Communications with parents and students would provide information about the stages individuals had reached on a path of development, accompanied by suggestions for supporting further growth.

At the levels of school and system, assessments would provide information about student groups and the points they had reached in their learning. The focus would be on understanding overall levels of attainment, benchmarking these against other schools or school systems, establishing and monitoring attainment gaps between student subgroups, monitoring trends over time, making decisions about the allocation of resources, and reporting to the public. The interpretation of students’ levels of attainment—for example, for the purposes of setting performance standards—would be made against a set of described and illustrated proficiency levels. Inferences about students’ levels of attainment would be based on international surveys and the jurisdiction’s own surveys, usually using appropriate samples of student populations.

Finally, these jurisdictions have taken steps over time to remove or minimize high-stakes assessments that restrict some students’ access to the next stage of school or allocate them to different tracks. Where there is a continuing need to manage student competition for entry (usually to university courses), efforts are being made to ensure that decisions are based on the rich intentions of the school curriculum rather than on narrow selection instruments with the potential to distort the focus of teaching and learning in schools.

Questions for Reflection and / or Provocation

- ✓ What ideas about learning do you think are underlying the student and system assessments in your context? Do you think they are similar or different from the ones underlying the systems in this chapter?
- ✓ Do you think the assessment system in your context fully measures its goals for students?
- ✓ These systems provide teachers with frameworks, tools and learning progressions to help them understand where students are in their learning. How do assessment supports for teachers in your system compare to those provided to teachers in the systems in this chapter?
- ✓ Estonia, Finland and Hong Kong are experimenting with ways to measure development of general competencies and cross-curricular learning. How is your system thinking about monitoring broad competencies and activities like these?
- ✓ How is information about student attainment communicated to students, to parents, to postsecondary institutions, and to employers in your context? Does it fully capture student capabilities and their progress in ways that are useful for each of those audiences? How does it compare to the practices described in the systems in this chapter?
- ✓ These systems have tried to reduce the use of tests to sort students into different education pathways, but have found this to be challenging in some cases. Does your system have this challenge? What efforts have been made to reduce this practice while still offering students opportunities that meet their needs and interests? Are there insights you can take from the experiences of these systems?

6

Highly Effective Teaching



Chapter Key Themes

- In these five jurisdictions, teaching has traditionally been a high-status profession. Excellent teaching is viewed as essential to successful student learning and critical to a nation's future.
- There are high standards for teacher preparation. Admission is often competitive. Programs are practice-based, and include the development of deep subject knowledge, pedagogical content knowledge and learning theory.
- Teachers have clear career progressions that provide them with opportunities to develop expertise, specialization and leadership.
- There are well-defined standards and competencies for teaching that create a shared understanding of what effective teaching looks like. This provides a frame of reference for planning professional learning and against which professional growth can be monitored.
- Teachers often also have access to professional opportunities such as study sabbaticals, involvement in research, secondments and visits to other schools or systems.
- Working conditions are designed to make teaching an attractive career choice. This is defined broadly to include not only pay, but also teacher workload and autonomy over what and when they teach within the national framework.

Support for the kinds of learning that school curricula now expect requires highly effective teaching that goes well beyond delivering specified content. Student learning that leads to deep conceptual understanding, the ability to reason about content, and skills in transferring and applying knowledge to new and complex situations depends on teaching grounded in expert disciplinary knowledge and sophisticated understandings of how students learn. Highly effective teaching supports the development of creative thinking, critical thinking, and skills in investigating, collaborating, and communicating. It involves establishing the points students have reached in their learning, including by diagnosing misunderstandings and gaps; designing interventions and targeting instruction to learners' needs; and monitoring the progress individuals make over time. Recent reforms to the school curriculum and associated assessment processes are demanding new levels of professional expertise, and all five of these jurisdictions are pursuing strategies to recruit, prepare and develop the expert teaching workforces required to meet these demands.

Building a Stronger Teaching Profession

The strategies these jurisdictions are pursuing are designed to strengthen teaching as a profession. They include strategies to recruit the best possible candidates into teaching; provide high-quality preservice preparation for the kinds of professional work that teaching now entails; support teachers to work with high degrees of autonomy, develop innovative teaching solutions, and learn from and contribute to research; provide professional standards and clear career paths; and promote and strengthen professional communities and collaborations. They also include strategies to support the day-to-day work of teachers, such as ensuring effective work environments, adequate resources, attractive remuneration, and supportive working conditions (hours, workload, class sizes).

Recruiting highly able teachers

These jurisdictions have all prioritized the recruitment of highly able people into teaching. In some jurisdictions, teaching has historically been highly respected by society, making it a relatively attractive career. This has been the case in Korea and Hong Kong, with their strong Confucian traditions of respect for teachers. In Finland, too, teachers have been highly regarded in part because of their past role in nation building and the preservation and promotion of Finnish culture and language. These school systems have built on this strong base to ensure that teaching remains attractive and competitive. In the 1960s and 1970s, Korea established 4-year teacher education programs to build a more qualified teaching workforce and combined this with relatively high levels of remuneration and job security. As a result, Korea now draws its teachers from among the most academically able school leavers and has high rates of competition for entry to teaching. Finland has raised standards for entry to teacher education by transferring teacher education to universities and requiring teachers to have a master's degree. Finland has also given practicing teachers greater autonomy. As a result, teaching has become a desirable career choice among school leavers. Prior to 2010 and a recent decline in competition for entry, only one in 10 applicants was admitted to primary teacher education in Finland. Similarly, Hong Kong has steadily increased standards for entry to teaching and in 2019–2020 introduced a requirement that all teachers hold a bachelor's degree.

In British Columbia, competition for entry to teaching was strong 3 decades ago, resulting in today's highly qualified teaching workforce. However, competition has become less intense over time, partly as a result of a 2017 Supreme Court ruling on class sizes that left the province with teacher shortages in many school districts. This is believed to have led to a reduction in hiring standards.

In Estonia, many current teachers were educated during the Soviet era and so received strong preparation in the subjects they teach and in pedagogical methods. However, a large proportion of teachers are female, and the average age of teachers is 50. Estonia faces the challenge that teaching has relatively low social status and there is a lack of young people, especially males, wanting to enter the profession. Low salaries relative to other OECD countries and high workloads have made teaching less

attractive, and there are particular shortages in rural areas and in the teaching of STEM in upper secondary schools. These issues are being addressed, including through increased salaries and a new competency-based career model, but the country faces challenges in replacing half its teacher workforce over the next 10 to 15 years, and in maintaining past standards of teachers' pedagogical and subject knowledge.

In general, the high levels of professional preparation provided by these jurisdictions have enhanced the attractiveness of teaching as a career. In Finland, the transfer of teacher education to the nation's research universities in the 1970s raised the status of teaching and made it a more enticing prospect for school leavers, particularly female students. Teachers in Finland and Estonia require master's degrees, with teachers completing a 3-year bachelor's degree followed by a further 2-year master's degree. Teachers in British Columbia also have five years of preparation. A trend in these jurisdictions has been to increase requirements for entry and to raise standards for initial teacher education. This has been a particular priority recently in preschool education. For example, in Estonia, there has been a significant increase in the proportion of preschool teachers with bachelor's and master's degrees, and in Finland, the proportion of preschool teachers with at least a bachelor's degree has been increased.

Adding to the attractiveness of teaching in these jurisdictions have been high levels of community trust in teachers and their work. Teachers often have considerable independence and autonomy to decide what they will teach from the curriculum, how they will teach it, and when it will be taught. Over time, decisions about the curriculum and how student learning is assessed have been increasingly devolved to schools and classroom teachers, reflecting confidence in the professionalism of teachers and high levels of trust. In some jurisdictions, including Finland, this is accompanied by low levels of external accountability.



In Summary

In most of these jurisdictions, teaching has been a sought-after career, making entry to teaching highly competitive. High levels of professional preparation, community trust, and autonomous decision-making have added to the attractiveness of teaching, as have higher levels of remuneration and job security. However, in some jurisdictions, there has been a recent decline in the attractiveness of teaching and challenges in recruiting highly able young people into the profession, due in part to new alternative career possibilities.

Developing and implementing professional standards

Some of these jurisdictions have sought to strengthen the teaching profession by developing professional standards that make explicit the nature of teachers' work and describe what it means to become a more expert teacher. Although all jurisdictions provide teachers with opportunities for advancement, for example to departmental and school leadership roles, they do not all provide professional standards that describe increasing competence as a teacher. In some jurisdictions, the absence of explicit professional standards is explained by teachers' high levels of initial preparation and autonomy to decide what and how they teach.

Estonia set out expectations of teachers in its 2005 Teachers' Standards and also in renewed professional standards released in 2013 and 2019 (see Box 6.1). Current standards define three professional levels: teacher, senior teacher, and master teacher. However, the use of these standards has been voluntary, and promotion and remuneration decisions tend to have been made school-by-school or district-by-district, with no official national approach to career progression.

In other jurisdictions, too, teachers are promoted to more senior roles in the absence of standards describing increasing expertise in teaching or any clearly defined career ladder. In Finland, the position of tutor-teacher was created in 2016 to support the introduction of digital learning, increase teachers' levels of assessment literacy, and provide teachers with support in implementing the country's new curriculum. Teachers were trained to become tutor-teachers who were then appointed in all comprehensive schools.

Korea provides teachers with opportunities to be promoted to the position of 'master teacher', then to principal or education specialist (such as school inspector or research specialist). The master teacher role was introduced nationally in 2012 to support teachers with at least 15 years of teaching experience to share their professional expertise with colleagues. And in British Columbia, teachers can advance through Teacher Qualification Service levels by completing additional degrees, diplomas, or approved programs, but there are no explicit provincial teaching standards or formal career ladders to guide professional development, promotion decisions, or the evaluation of teachers' work.

Hong Kong launched its Teacher Competencies Framework in 2003 to describe and illustrate the competencies, skills, knowledge, and attitudes required of teachers at various professional stages and roles. This was followed in 2018 by the release of its Professional Standards for Teachers, which are designed to support teachers to reflect on their progress and professional development needs. The standards identify three roles of teachers: caring cultivators of all-round growth; inspirational co-constructors of knowledge; and committed role models of professionalism. For each of these roles, the standards define three stages of professional growth: threshold, competent, and distinguished (see Box 6.2 for stage descriptors of the standard, 'caring cultivators of all-round growth').

Box 6.1 Competence Areas in Estonia's Teachers Professional Standards

- 1 Supporting the learner** – is aware of the foundations and cultural specialties of the physical, cognitive, emotional and social development of the learner; finds out the level of the subject-related, study skills and learning motivation of the group and the learner and takes these into account when setting study (subject field, pedagogical and educational) goals; recognizes the learner's need for support and their individual study needs; supports the development of social and collaborative skills.
- 2 Planning of learning and teaching activities** – sets short- and long-term learning goals based on learner(s); chooses content and plans activities; considering the curriculum, chooses from learning materials the suitable one matching the learning goals and the level of learners and group; shapes the physically, spiritually, and emotionally secure collaborative study environment supporting well-being.
- 3 Teaching** – notices and recognizes learners' different interests, abilities, and needs; creates consciously a caring, bullying-free and collaborative atmosphere; teaches following the learner's specifics; set goals, learning outcomes and cross-subject integration; supports the development of core competences and the formation of the self-managing learner; guides students to apply digital technologies; systematically applies different ways, including digital technologies, for feedback and evaluation that support learning.
- 4 Reflection and professional development** – reflects one's own work, including analyzing the effect of teaching; using different methods, including colleagues and participating in study communities, analyses and interprets the results of educational research and applies them in his/her work; conducts action research on class/group level; follows, evaluates and values own physical, mental and emotional health.
- 5 Collaboration and supervision** – creates a trustworthy relationship with the learner and parents; gives feedback about learner progress to learner and parents; acts as a team member in a learning community.
- 6 Development, creative and research activities** – participates in learning communities and collaboration networks in developing the knowledge of the study field; participates in the development of the organization.

(Eisenschmidt et al., p. 90)

Box 6.2 Professional Standards for Teaching ('Caring Cultivators of All-Around Growth'), Hong Kong

DISTINGUISHED

Teachers participate in the design and monitoring of school policies and curriculum so that they are in line with the underpinning philosophy of whole-person education. They contribute to the cultivation of school ethos which manifests moral virtues, positive values, and attitudes. They see it as their mission and responsibility to nurture students to become informed and responsible members of the global society. Teachers promote students' growth and development through collaborating with families, communities, and other professionals. They enlist support within and beyond school settings to devise strategic plans that enable students to make informed choices with regard to life aspirations, empowering them to unfold their potential. They participate actively in the formulation of school policy for career and life planning and play a prominent role in the implementation. Teachers contribute significantly to the making of a stimulating and inviting school environment that offers learning experiences for students of different abilities, interests, and aptitudes to develop an intrinsic quest for learning, as well as emotional and social competence, achieving all-round development. Teachers play a part in the creation of a school climate that enables students with different educational needs and socio-cultural backgrounds to advance each other's potential and build on the strengths of their differences. In collaboration with colleagues, they work on the design, implementation, and evaluation of school policies and practices to ensure all students are treated with equity and can learn and grow from the enriched experience that a pluralistic culture can offer.

COMPETENT

Teachers seek to promote a whole-person education curriculum. As role models of moral virtues, positive values, and attitudes, they make conscientious effort to facilitate a balanced growth of students through the curriculum and in their daily interactions with students. They enhance students' capacity for self-management, self-regulation and lifelong learning, equipping them to face challenges that may emerge at different stages of their personal and social development. They provide learning experiences to broaden students' understanding of the changing world. Teachers coach their students along their life journeys. They foster students' self-understanding, goal setting, and reflective thinking at different stages of growth through teaching and guidance. They identify students' potential and provide them with learning opportunities to realize their strengths and explore multiple pathways for the future. Through sharing their passion for learning, teachers cultivate a positive ethos and establish an environment conducive to learning. They also guide students in building congenial relationships with their peers, teachers, parents, and the community through learning activities and personal examples. Teachers apply their knowledge and understanding of socio-cultural differences in their daily interactions with students. They create an inclusive learning environment in which students of different backgrounds and educational needs feel valued and value each other. They advance students' potential in every aspect of life and encourage them to complement each other on the path of learning and growth.

Box 6.2 Professional Standards for Teaching ('Caring Cultivators of All-Around Growth'), Hong Kong (*continued*)

THRESHOLD

Teachers believe in whole-person education that aims at the development of students' moral, intellectual, physical, social, and aesthetic potential. They support and practice a whole-person education curriculum that attends to a balanced growth of students in these areas. They aspire to be role models of moral virtues, positive values, and attitudes expected of students. As global citizens, they enhance their knowledge of current issues in the local, national, and global scene and relate their teaching and guidance to these issues. Teachers see actualising students' potential as a goal of whole-person education. They help students understand themselves and have a basic grasp of their potential at different stages of growth. They trust, encourage, and support students in taking up challenges in life. Being aware of life-planning as an ongoing process for personal fulfilment, they explore study and career opportunities for students and take up their role in implementing the school policy for life-planning education. Teachers are aware of the importance of a positive learning environment. They ensure that it is physically safe and well-managed, maintaining a disciplined and harmonious environment that facilitates mutual support for learning and growth. Adopting a positive attitude towards socio-cultural differences and their students' diverse needs, teachers seek to equip themselves with relevant knowledge and skills. They educate students to respect each other's differences and culture.

(Committee on Professional Development of Teachers and Principals, 2015a, p. 6).

Hong Kong's Professional Standards for Teachers are based on the concept of professional growth and are designed to describe and illustrate what it means to become more effective as a teacher (from 'threshold' to 'competent' to 'distinguished'). In the words of the standards, 'when teachers grow, so do learners' (Committee on Professional Development of Teachers and Principals, 2015b, p. 2), and 'active lifelong learning is necessary for developing all members of the teaching profession into effective enablers of students' learning and growth' (p. 4). This focus on professional growth in the interests of improved student learning is described in Hong Kong as reflecting a student-centered approach to teaching standards.

In 2019, the Hong Kong Task Force on Professional Development of Teachers recommended the introduction of a professional career ladder to enable teachers' reflections on their own professional growth and to support their planning of future professional development. The task force envisaged a career ladder defining professional growth as continuous advancement throughout a teacher's career in the three professional roles mentioned above and in three areas: professional competencies; professional values and conduct; and aspiration for self-advancement through self-reflection. In addition to supporting teachers' self-reflections and planning, the career ladder would provide schools with a basis for reviewing the professional development needs of staff, and the school system, universities, and professional organizations with a basis for more systematic and focused professional learning targeted at teachers' development needs (Hong Kong Task Force on Professional Development of Teachers, 2019). The proposed career ladder was also envisaged as playing a role in advancement decisions from teacher to senior teacher, to deputy principal, to principal.



In Summary

Some of these jurisdictions have sought to strengthen the teaching profession by developing professional standards that make explicit the nature of teachers' work and describe what it means to become a more expert teacher. However, there are often weak connections between teaching standards and decision-making in relation to teacher professional development, teacher promotions, and the evaluation of teachers' work. An exception is Hong Kong, where teaching standards have been developed and are used to inform decisions of these kinds.

Valuing the work of teachers

The attractiveness of teaching as a career and its perceived professional status depend in part on the extent to which the community values the work of teachers and on the extent to which teachers themselves feel valued. These jurisdictions are working to increase the esteem in which teachers are held in the community and to ensure that teachers feel valued and have high levels of self-efficacy.

As already noted, teaching has historically had high social status in societies with Confucian traditions, including Hong Kong and Korea, and in countries in which teachers are perceived to have had an important role in nation building, including Finland and Estonia. In all five of these jurisdictions, teachers are held in relatively high regard, and the fact that students in these jurisdictions have performed at high levels in international surveys may have added to levels of community respect for the work of teachers.

In Finland, teachers have enjoyed high social status for many decades. Some believe that this high status has its origins in the 19th century when priests, doctors and teachers were the three educated groups in Finnish towns (Sahlgren, 2015). A survey in 2000 found that only 20% of the Finnish population described teaching as low status, compared with 40% to 80% in other Nordic countries (Sahlgren, 2015). In general, perceptions are more positive in Finnish-speaking schools than in the country's Swedish-speaking schools. And teachers themselves feel highly valued by society. In 2018, 58% of Finnish teachers reported that they felt valued, compared with an OECD average of only 26%.

However, in Estonia, although the community values teaching (88%), teachers themselves do not feel valued (14% in 2013, with a recent increase to 26%). There is some evidence that younger teachers feel less valued than older teachers. Over time, teaching has become an increasingly less attractive option, with young Estonians seeing opportunities to earn more in less demanding occupations.

In Korea, teachers are perceived by the public to have high levels of job security, autonomy, and benefits beyond those available to most professionals. However, teachers generally feel inadequately supported by the government and believe they have limited opportunities to shape and control their own work. A 2008 study found that Korean teachers had the lowest levels of self-efficacy among 23 participating countries (OECD, 2010b). Korea has been taking steps to address this issue. For example, a sabbatical year has been introduced to free teachers from their teaching responsibilities for a year to undertake research at a university or training institute. In 2019, 852 teachers participated in this scheme, which is intended to combine theory with school-based practices.

As part of its curriculum reforms in 2000, Hong Kong allocated funding to support teachers and schools in their implementation of reforms in areas such as effective learning, promoting all-round education, and applying information technology. This fund paved the way for teachers to participate in school-community partnerships that combined theory and practice.

Another approach some jurisdictions have taken is to recognize outstanding teaching through awardschemes. An example is the Chief Executive's Award for Teaching Excellence in Hong Kong. This annual award, introduced in 2004, recognizes exemplary teaching practices and was introduced to enhance the professional image and status of teachers, and to facilitate the sharing of excellent practices. Awardees receive cash awards and become members of the CEATE Teachers Association.

In Summary

These jurisdictions are working to increase the esteem in which teachers are held in the community and to ensure that teachers feel valued and have high levels of self-efficacy. The extent to which teachers feel valued and able to control their own work depends on levels of professional autonomy, remuneration, and other working conditions. Strategies include the provision of sabbaticals and research funding, and public schemes for recognizing teaching excellence.

Providing attractive working conditions

Efforts to strengthen teaching as a profession and to attract the best possible candidates into teaching include initiatives to improve teachers' working conditions. These jurisdictions have worked to make teaching more attractive by increasing teacher salaries and by addressing concerns about workload, class sizes, and the hours teachers are required to work.

Initiatives to improve the attractiveness of teachers' remuneration have addressed relativities between teachers' salaries and general salary levels within the jurisdiction, particularly those of other tertiary educated professionals; the attractiveness of teachers' starting salaries; and opportunities for advancement and to earn competitive salaries by the top of the pay scale. These five jurisdictions are at very different points in their progress in ensuring attractive starting salaries for teachers, as well as opportunities to advance to salary levels that compete with other professionals.

In general, these jurisdictions do not pay unusually high salaries (compared to Luxembourg, Germany and Switzerland). With the exception of Estonia, where starting salaries are unusually low by OECD standards, most have starting salaries near the OECD average.³

In Estonia, teachers' salaries have increased recently from around 75% of the salaries of other tertiary educated professionals to about 90%. Salaries have been significantly increased over the past decade, placing them above other Baltic states and Eastern Europe, but still below Finland, Sweden, and the OECD average. Estonia has set goals for further increasing salaries, as well as introducing a new career structure for teachers. The power of increased remuneration was demonstrated when the salaries of preschool teachers were increased (doubling in some cases) to 90% of primary teachers' salaries. The result was strong competition for enrolment, with seven applicants for every university place.

In British Columbia, teachers historically were among the highest paid in Canada. Pay scales vary by school district and salaries are no longer higher than in other Canadian provinces, but they remain comparable to other professional salaries in the province, with the result that teachers tend to be recruited from the top 25% of school leavers.

In Finland, teachers' starting salaries are only slightly above the OECD average and similar to other professional salaries. However, salaries in Finland do not increase as much with experience as in other countries. The difference between starting salaries and the top of the salary scale is small relative to many other countries, with the top of the scale in Finland being below the OECD average. In contrast, Korea

³ In Estonia, teachers' salaries have increased by more than 60% over the past decade, from around €880 to €1500. Starting salaries (around €1300) are only slightly below those of comparable occupations in Estonia.

has a much longer salary scale. Teachers begin slightly below the OECD average, but the top of the salary scale is more than 60% higher than the OECD average.

A number of these jurisdictions have also taken steps to reduce teacher workloads, including by reducing class sizes and hours of teaching. Class size reductions have been a particular priority in Korea and have been seen as a way of improving classroom learning environments. In 2005, Korean primary classes averaged more than 30 students, and lower secondary classes, more than 35. By 2018, these had been reduced to 23 and 27 respectively, which were still above the OECD average.

Estonia also reduced class sizes in its lower secondary schools over this period. In Estonia and Finland, average class sizes (around 19) are below the OECD average. However, in lower secondary schools, the ratio of students to teachers is well below the OECD average (9:1 in Finland, 10:1 in Estonia). Despite this, class size continues to be a concern among Finnish teachers, perhaps because emphasis was given in the 2014 national core curriculum to open learning environments in which two or more teachers can be responsible for much larger classes of students.

In British Columbia, legislation in 2002 removed teachers' rights to negotiate class sizes. In 2017, this legislation was found to be unconstitutional by the Supreme Court of Canada, opening the way for smaller class sizes and introducing the need for additional teachers. The province committed to hiring 3,500 additional teachers and specialty teachers to enable a reduction in class sizes.

Hours of teaching are lower for Finnish teachers than for teachers in any other OECD country. Lower secondary teachers teach about 600 hours per year—about 100 hours less than the OECD average. The situation is very different in Estonia. Despite relatively small classes, teachers' salaries until recently have been low and there have been teacher shortages. In the past, to earn more, Estonian teachers took on additional classes. Although the number of required teaching hours was reduced, this had limited impact on the hours teachers actually worked. The result was less time for non-teaching activities, such as mentoring, and teachers feeling undervalued and overloaded. New regulations on teacher workloads were introduced in 2013 to address this issue by specifying total working hours per week.



In Summary

These jurisdictions have introduced policies to strengthen the teaching profession and make teaching a more attractive career by increasing teacher salaries and reducing teacher workloads (through changes to class sizes and contact teaching hours). The five jurisdictions are at very different points in their achievement of these objectives.

Strengthening Entrants' Content and Pedagogical Knowledge

The preparation of teachers through preservice teacher education programs is a crucial component of these jurisdictions' efforts to build a professional teaching workforce and to enhance the quality of teaching in schools. Over time, these jurisdictions have increased the academic rigor of preservice education programs by increasing entry requirements and raising the qualifications of teachers. Efforts have also been made, in some jurisdictions more than others, to ensure high levels of content and pedagogical content knowledge, familiarity with the school curriculum, and skills of inquiry and self-reflection on teaching.

Increasing the academic rigor of preservice teacher education

A general objective over several decades in these jurisdictions has been to increase the depth of teachers' content and pedagogical content knowledge through more rigorous preservice teacher preparation. In most jurisdictions, this has included moving teacher preparation from teacher training institutions into the jurisdiction's research universities and reducing differences in the training of primary and secondary teachers.

British Columbia moved teacher education into its three universities in 1955. In Finland prior to the Teacher Education Act of 1971, teachers were prepared in teacher training colleges (seminaria) directly from school in the case of primary teachers, or after completing a university degree and a period of evaluated practice in the case of secondary subject teachers. As the OECD has observed, 'the premise was that as long as students had a solid foundation of subject matter knowledge from their upper secondary schooling, they could be taught enough about pedagogy, child development and classroom management in two or three years to become effective teachers' (OECD, 2011, p. 125). However, the introduction of the comprehensive school in Finland brought with it the need for more highly trained teachers and, from the early 1970s, all teacher education in Finland was moved to universities. Hong Kong similarly had a two-tier teacher training system, with primary and lower secondary teachers undertaking programs in five colleges of education, and most upper secondary teachers completing a postgraduate diploma after completing a university degree. From 1994, the five colleges were combined to form the Hong Kong Institute of Education, which in 2016 was renamed the Education University of Hong Kong. In Estonia, teacher education is provided at the research universities in Tartu and Tallinn. And in Korea, a two-tier training system remains in place, with primary teachers mainly being prepared in 11 national universities of education, and secondary teachers being prepared in a much wider range of college and university programs.

One consequence of moving teacher education into universities and requiring all teachers to have at least a bachelor's and sometimes a master's degree was to increase standards for entry and to make admission to teacher education more competitive. As noted earlier, competition has become less intense in some jurisdictions recently, but in general, standards for entry were raised by moving teacher education into universities, and they remain high. In Finland, admissions processes are based first on a national entrance examination (VAKAVA) with successful applicants then undertaking an aptitude test (group interview). Final admissions are based on the aptitude test and applicants' matriculation examination grades. Although there has been a recent decline, in 2010, 6,600 applicants competed for 660 places in the nation's eight universities with primary education programs.

A second consequence is that teachers in general have become better qualified. Teachers are now expected to have university degrees, and many are expected to include in those degrees, university-level study of the subjects they will teach. There is also an intention that, while primary and secondary teachers may pursue different programs of study, those programs should be equally rigorous.

All these jurisdictions require teachers to have at least a bachelor's degree and to complete a teacher education program. In British Columbia, teachers are prepared for five, and sometimes six years, which may include an initial bachelor's degree followed by an education degree. Korea requires every teacher to have a subject major, which is listed on their teaching certificate. Hong Kong also requires new teachers to have a bachelor's degree and, from 2000, introduced an 'all trained, all graduates' policy for its teacher workforce. Targets have been set for increasing the percentage of graduates from 65% to 100% in primary schools, and from 85% to 100% in secondary schools. A 2019 task force on professional development considered that implementing this policy would 'help raise teachers' professional status, retain and attract talents, and further enhance the quality of education' (Hong Kong Task Force on Professional Development of Teachers, 2019, p. 28).

Estonia and Finland require teachers to complete a 5-year master's program. Primary teachers generally complete their master's degree majoring in education. In Finland, they also must study at least two other subjects in the relevant university department (for example, mathematics in the mathematics department). Secondary teachers in Estonia and Finland generally major in the subject they will teach and also undertake pedagogical studies (majoring in pedagogical studies at the master's level). Lower secondary teachers not intending to become subject teachers complete their preparation only within an education faculty.

The decision to move teacher education into universities also had far-reaching implications for teacher education programs, education faculties/departments, and teacher educators. Prior teacher training arrangements generally provided lower levels of academic preparation. For example, Finnish seminaria tended to admit students in larger numbers, to be taught by less qualified staff. When teacher education was transferred to Finnish universities, it initially triggered concerns that the universities' academic standards would be lowered. By the 1980s, there were proposals to move teacher education out of universities to Finland's new universities of applied sciences.

However, across these five jurisdictions, teacher educators began undertaking and publishing educational research to meet the expectations of the universities in which they now worked. Finnish universities introduced the concept of teachers as researchers and promoted inquiry as an important component of effective practice. The publication of research in peer-reviewed journals took on a higher priority as teacher educators increasingly also became educational researchers. More recently, for example in Estonia, teacher educators have undertaken more of their research collaboratively in schools to address practical problems confronted by teachers. And, at the same time, more action research has been introduced into preservice teacher education courses.

A challenge has been to maintain and enhance standards of teacher preparation, particularly as the number of institutions providing teacher education has increased in some jurisdictions. For example, the number of institutions in British Columbia increased in 2003 from the original three to nine. More recently, a challenge has come from universities outside British Columbia offering distance education courses in shorter periods of time. The response in a number of jurisdictions has been to put in place quality assurance processes for teacher education programs. In Estonia, a very small number of universities offer teacher education. Until 2019, teacher education programs were subject to an external assessment by the Estonian Quality Agency for Higher and Vocational Education, but since that time, study programs have been evaluated within each institution. In British Columbia, a Teachers' Council sets provincial standards for teacher education and approves new teacher education programs. In Hong Kong, the Education Bureau has become increasingly involved in teacher education and has recently required teacher education institutions to place more priority on teachers' professional conduct. And in Korea, the government has established an accreditation system for teacher preparation programs and is prioritizing the development of practical competence in the curricula of teacher education programs.

General questions raised by the move of teacher education into universities are whether teachers are being provided with a useful balance of theory and practice (there is concern that too much time is spent on issues like social justice in some programs), and what role governments and ministries of education should play in determining the content of teacher education programs.



In Summary

Over time, these jurisdictions have taken steps to increase the academic rigor of preservice teacher education. These steps have included moving teacher education from earlier teacher training institutions into universities; raising student entry requirements; increasing the rigor and depth of preservice courses; increasing qualification requirements for teaching; and introducing quality assurance processes for teacher education programs. There have been significant implications for the professional work of teacher educators.

Developing essential competencies for teaching

Although preservice teacher education programs in these five jurisdictions have many features in common—the preparation of teachers in the content they will teach; developing mastery of a range of teaching methods; building knowledge of child and adolescent development and educational psychology; enhancing classroom management skills; and providing opportunities for prospective teachers to practice under supervision—they also differ markedly in their approaches and philosophies. And there are often significant differences of approach within jurisdictions. For example, teacher education programs at the University of British Columbia and Simon Fraser University are different from the approaches of other teacher education programs in British Columbia, as well as being different from each other. And teacher education at the University of Tartu in Estonia has historically been different from teacher education at Tallinn University. These differences are evident in the different priorities of these teacher education programs.

One priority is to ensure that teachers have high levels of content knowledge. Although this is a feature of all teacher education programs, and particularly in the preparation of secondary teachers, it is a higher priority in some jurisdictions and programs than in others. Across these jurisdictions, secondary teachers are expected to have a bachelor's or master's degree in the subject they will teach, while primary teachers often complete a general education degree. However, in Korea, every teacher is required to have a subject major and, in Finland, primary teachers major in education, but are expected to minor in at least two of the subjects included in the primary school curriculum (OECD, 2010a). In Estonia, teachers traditionally have had high levels of content knowledge, with many teachers receiving strong academic preparation during the Soviet era. This was particularly true at the University of Tartu, where all students specialized in disciplines before deciding to become a teacher (whereas students at Tallinn University enrolled to become teachers in a program focused on pedagogical preparation).

A second priority is to ensure that teachers have high levels of pedagogical content knowledge (that is, subject-specific teaching knowledge). Again, this is a feature of all teacher education programs, but is given a particularly high priority in some. In Finland, the introduction of the comprehensive school in the 1970s and the abolition of tracking in 1985 introduced a new teaching challenge. For the first time, all teachers were required to teach the entire age cohort, meaning that they had in their classrooms, students at widely differing levels of attainment. Finland took this challenge seriously and began the intensive preparation of teachers—both preservice and in-service—to address this challenge. Teachers were given training in establishing the points individuals had reached in their learning, diagnosing students' difficulties, and adapting their teaching to the varying learning needs of the students they now taught. Because teacher education in Finland is a shared responsibility of the education faculty and subject faculties, teacher preparation developed an unusual focus on subject-specific pedagogies of this kind, for both primary and secondary teachers. In this way, preservice teacher education in Finland developed a strong clinical orientation and teachers were provided with high levels of pedagogical content knowledge.

This has been less true in other jurisdictions. For example, although teachers in Estonia historically had relatively high levels of content knowledge, they tended to be less well prepared in the study and support of learning.

A third priority is to ensure that teachers have a sound understanding of the curriculum they are expected to teach. This is a particular priority in jurisdictions that have detailed, centrally prescribed curricula. In Korea, a primary objective of preservice education is to develop future teachers' understandings of the national curriculum and how to deliver it. This objective is reinforced by the national teacher employment examination that primary and lower secondary teachers must pass after completing their degree and receiving a teacher's licence. The assessment of candidates' understandings of the curriculum is a major component of this examination. This is also a focus of the training Korean teachers receive after being appointed to a school. Training for new teachers is conducted over a 2-week period in local offices of education, followed by six months of training by principals, vice-principals, and mentors, and then two weeks of follow-up training in the summer vacation. Although this training is wide-ranging, there is a strong focus on subject teaching and the implementation of the national curriculum.

A fourth priority is to develop teachers' skills in researching and reflecting on teaching practices. A number of teacher education programs include a research component. For example, Estonia introduced a requirement in 2019 that the graduation examination or final thesis should incorporate an educational research component to develop teachers' abilities to make evidence-based decisions about their teaching. (Previously, students undertook subject-based research as part of the master's degree, but from 2019 the thesis must include research into a pedagogical issue). Similarly, teachers in Finland are required to write a research thesis as the final requirement for their master's degree, again in the expectation that they will engage in disciplined classroom inquiry throughout their career. This is preceded by mandatory courses in both qualitative and quantitative research methodologies. The University of British Columbia has made its teacher education program 'inquiry-based' in the belief that 'teachers should routinely ask critical questions about their curriculum choices and pedagogical decisions'. This is considered necessary 'if educators are to understand and judge whether current educational practices serve identified human needs and satisfy important human purposes'. The aim is to engender in teacher candidates an understanding that teaching is inquiry-based, judgment-centred, and requires engagement with multiple others (University of British Columbia, 2010). The program at Simon Fraser University also involves inquiry-based learning, influenced by that university's problem-based approach to medical education. Students are integrated into schools where they work with senior teachers, referred to as faculty associates, on practical problems identified within the school, and return to university for discussions of their observations.

In Summary

Although preservice teacher education programs in these five jurisdictions have many features in common, they also differ markedly in their approaches and philosophies. Some preservice teacher education programs provide unusually high levels of subject knowledge. Some are particularly focused on building future teachers' levels of pedagogical content knowledge. Others are focused on ensuring that teachers have a sound understanding of the school curriculum and how to teach it. And still others are distinguished by a strong focus on building teachers' inquiry skills and reflections on their own practices.

Developing the Effectiveness of Current Teachers

To promote highly effective teaching throughout the school system, these jurisdictions also recognize the importance of supporting the day-to-day work of existing teachers through the provision of quality teaching and learning resources and opportunities for continuing professional development.

Facilitating quality professional learning

All five of these jurisdictions recognize the importance of building the competencies of existing teachers through quality professional learning. However, there are significant differences in the priorities these jurisdictions have given to in-service professional learning; the content of their professional development programs and activities; and the mechanisms and providers through which professional development is delivered.

A general observation is that a number of these jurisdictions attach relatively low importance to the provision of in-service education to teachers. The assumption appears to be that the highly selective processes through which people are admitted to teaching, coupled with intensive 5-year or 6-year preparation programs, mean that practicing teachers have high levels of expertise, including high levels of content knowledge and pedagogical content knowledge, as well as classroom management skills that will be further developed through experience. As a result, in some jurisdictions there are minimal or no requirements for teachers' continuing professional learning; very little direction on development priorities from the ministry; and a tendency to use professional development days for annual school planning purposes, to familiarize teachers with changes to the national curriculum, or occasionally, to encourage attention to government policy priorities. Because teachers are assumed to have expert content and pedagogical knowledge, professional learning may be focused in other areas, such as student health and well-being, social and emotional learning, and home-school partnerships. However, in some jurisdictions, this underlying assumption may be less valid than it once was.

In Finland, the government plays a limited role in guiding teacher learning. Teachers are required to participate in three days of professional development each year, but two of these days are commonly spent planning for the new school year, and one is spent at the end of the year planning for the next year. About 20% of Finnish teachers report never participating in other kinds of professional development. Because schools are primarily funded at the municipal level, and municipalities vary in the priority they give to professional learning, teachers' experiences vary significantly across the country. The many different providers of professional development add to this variability. The National Government has offered financial support for professional learning in the development of school cultures; pedagogy, vocational, and subject-specific competencies; well-being and support for learning; language and cultural diversity; and digitalization and ICT (information and communications technology). It is also attempting to provide more equitable access to professional learning. However, the widespread use of traditional teaching methods and the independence with which Finnish teachers have traditionally worked have made it more difficult to introduce nationwide reforms such as student-centered learning and professional collaboration, despite many teachers wishing to see more diverse opportunities provided.

In Estonia, too, the government provides limited direction to teacher professional learning. Around 3% of the teachers' salary fund was once available for professional development, with schools and municipalities deciding how that would be used, but this was reduced to 1% as part of a trade-off for higher salaries. Municipalities can add to this but vary significantly in their capacity. When the Estonian curriculum was first introduced, the government provided extensive in-service training for teachers, and continues to fund strategically important training, but most professional development is now prioritized and funded locally. Schools identify training needs and develop professional development plans, which often involve teachers collaborating to observe and provide feedback on each other's teaching. In addition, external providers offer in-service courses. Universities are the main providers, sometimes with the support of European

Social Funds and involving customized collaborations around particular issues that schools are confronting.

Although Estonian schools are free to determine the content and format of teachers' in-service training, the Ministry of Education and Research offers guidance at the national level, most recently through the national Teachers and School Heads Training Programme for 2015–2018. Under this program, teachers establish their continuing education goals during a development interview with the principal. The principal then determines what types of in-service training the school will offer. One of the most important in-service education themes for current teachers is how to assess and diagnose student learning, differentiate learning according to each student's needs, and support students with specific learning difficulties. Other programs are focused on the development of general competencies such as learning to learn, social-emotional competencies, and digital competencies (Eisenschmidt et al).

In Korea, teacher professional learning tends to be focused on building teachers' understandings of the national curriculum and its delivery. When a new curriculum is introduced, all teachers are given professional development on changes to their subjects. To support the introduction of the 2015 curriculum revision, the ministry trained 13,000 teachers to provide professional development to colleagues in schools. New policies, for example in areas such as student disabilities, health and hygiene, the prevention of bullying, and sexual abuse also are accompanied by professional learning. Teacher participation in professional development has increased because it counts toward school reviews, personal performance evaluations, and promotions. Under Korea's Teacher Evaluation Professional Development system, high-performing teachers are eligible for research sabbaticals, while low-performing teachers may be required to complete several hours of professional learning. Professional learning is provided by public and private providers, with the best-known provider being the central education training institute of the Ministry of Education. Most professional learning is provided by university schools of education and the 17 educational provinces. The government has also provided funding to support professional learning communities across the country. Teachers apply to local offices for funding to support learning and research groups. Because entry to teaching is competitive, Korean teachers are generally well prepared to teach academic subjects. However, content-heavy curricula and a focus on preparation for university entry tend to promote a 'delivery' mindset and leave teachers feeling less confident about teaching general competencies (T. Bentley, personal communication, 29 September, 2020).

In British Columbia, the Ministry of Education, responsible for education policy, represents an important component of a strong professional culture across the province. All teachers are required to undertake six days of professional development each year. In 2016, the Ministry of Education funded an additional two days to enable all teachers in the province to explore the implications of the new curriculum for their teaching. A key contributor to professional learning in the province is the British Columbia Teachers' Federation, which plays a role in teacher induction, and through its Provincial Specialist Associations, offers provincial and regional conferences, newsletters and journals, and contributes to the development of the provincial curriculum. A wide group of education consultants are active throughout the province and provide workshops to schools and districts, and services to boards of education. Voluntary networks of 'inquiry-based' schools and school districts, whose origins are rooted in the implementation of the Ministry of Education's performance standards in 2000, have played an important role in advancing education leadership in the province over the past 20 years. Many of the educators involved in these networks are now in significant leadership roles—as principals, district superintendents, local union presidents, and members of university faculties.

In Hong Kong, the government, through the Education Bureau, provides significant guidance to teachers' professional learning. In 2013, it renamed its committee to promote territory-wide professional development, the Committee on Professional Development of Teachers and Principals (COTAP). That committee had previously recommended that every teacher be required to attend at least 150 hours of professional development over three years, with the details of teacher learning being decided by schools

to support curriculum development and school-based management. It had also proposed in 2003 the Teacher Competencies Framework to guide professional learning. The framework was updated in 2018 to the Professional Standards for Teachers, which identify four areas for professional development—teaching and learning, student development, school development, and professional relationships and services—and three stages of professional growth (threshold, competent, distinguished). A government task force on professional development noted in 2020 that a culture of teacher professional development had developed in Hong Kong. This included in-school and between-school professional learning communities, an induction and mentoring support framework, collaborative research and development projects, and professional study tours for teachers. The task force observed that the ultimate goal of professional development in Hong Kong was to meet students’ diverse needs and benefit every student’s learning and growth.

In Summary

There are significant differences in the priorities these jurisdictions give to in-service professional learning. In some jurisdictions, because teachers are assumed to be well prepared for teaching through their preservice education, there may be minimal requirements for continuing professional learning and very little direction on priorities for development. In other jurisdictions, professional learning is seen as a way to build teachers’ abilities to reflect on and improve their work, including through classroom-based action research. A jurisdiction-wide framework of professional standards may guide professional learning by identifying major aspects of teachers’ work and growth.

Ensuring quality teaching resources

In most of these jurisdictions, significant use is made of textbooks and published student workbooks (see Box 6.3). Although schools may be provided with government textbooks, these are now generally provided by commercial publishers in highly competitive textbook markets. Schools and teachers choose the textbooks they will use, and these play a central role in the interpretation and delivery of the national curriculum and in the pacing of teaching and learning. Increasingly, textbooks and teachers’ guides are being published online, introducing the possibility of incorporating audio and video materials, animations, and interactive learning activities. These jurisdictions exercise varying degrees of control over textbooks and their content, but increasingly rely on the market for quality assurance.

Schools and teachers may be encouraged to adapt textbooks to local circumstances and to develop their own school-based teaching resources. They may be provided with support to do this, including through online guidance and resources. Growing use is being made of online repositories of official and teacher-developed teaching and assessment resources. At the same time, platforms are being introduced to support online learning and the exchange of information between teachers, students, and parents. In most of these jurisdictions, a number of government agencies, local education offices, and commercial providers are involved in assisting teachers to interpret, adapt, and deliver the school curriculum. These include a growing number of technology companies.

Box 6.3 Ensuring Quality Teaching Resources

In British Columbia, the ministry has provided limited resources to support teachers in implementing the new curriculum. These include webinars and publications that explain the background and rationale for the curriculum; sample lessons ('instructional samples') provided by teachers; and competency profiles that describe student development in the curriculum's core competencies. In place of pre-authorizing lists of textbooks and other resources, the ministry has created an online platform that provides a space for teachers to share their ideas and resources and is building a curated digital resource collection for use by teachers. The British Columbia Teachers' Federation also maintains a crowd-sourced set of lesson plans, classroom activities, assessments, and research findings.

In Estonia, considerable use is made of textbooks and workbooks, with teachers having autonomy to choose and also to develop their own learning materials. Teachers must have at least one coursebook and a workbook in each subject in the primary and lower secondary school, and at least one coursebook for each subject in upper secondary school. There is a very competitive textbook market. Publications are attractive, of high quality, and are often authored by experienced teachers collaborating with university staff. Publishers offer incentives to schools in the form of free in-service courses and free inspection copies of textbooks. Prior to 2021, the ministry purchased the right for all schools to access online digital textbooks from two major commercial hosting platforms, but subsequently provided funds for schools to purchase materials from various companies. Other electronic learning materials are available for teacher use, including through the ministry's e-schoolbag, a repository containing more than 18,700 learning resources.

In Finland, too, extensive use is made of textbooks and digital learning resources provided by five main commercial publishers. More than 95% of schools purchase these resources, with students, on average, using textbooks and workbooks daily. Heavy reliance on textbooks for the delivery and pacing of the curriculum is a feature of Finnish classrooms. Competition between publishers is strong and is considered to guarantee quality, making the earlier centralized inspection of textbooks redundant. Materials are produced by teams of three to seven authors, who are usually experienced teachers of the subject at the relevant grade level. Digital learning materials include audio and video resources, animations, and interactive materials, and have introduced the possibility of students advancing at their own pace with immediate feedback. The digitalization of the Finnish matriculation examination between 2016 and 2019 saw an increase in the use of digital devices and learning materials in schools, and this increased further with school closures in 2020 due to the COVID-19 pandemic.

In Hong Kong, teachers have traditionally been reliant on textbooks. These are produced by publishers and selected by schools. The Education Bureau provides a list of recommended textbooks and also issues Guiding Principles for Quality Textbooks. Schools are advised to adapt the curriculum and

Box 6.3 Ensuring Quality Teaching Resources *(continued)*

textbooks to local needs, resulting in significant additional school-based teaching and learning materials. The Education Bureau publishes guidance on the development of these materials. The Bureau also provides an online repository of official teaching resources searchable by subject, grade, and resource type. The repository enables the exchange of teaching and assessment materials and professional learning resources by teachers, and is managed by a government company, Hong Kong Education City. This provides access to 6,000 teaching and learning resources and 1,000 assessment tasks and is the largest education portal in Hong Kong with over one million page views daily. In 2020, the government committed to developing a territory-wide learning platform.

In Korea, national textbooks are produced by the government and also by commercial publishers. The Korean Textbook Research Foundation classifies textbooks as ‘national’, ‘authorized’, and ‘approved’. The Korean Education and Research Information Service (KERIS) developed and pilot tested digital textbooks with a consortium of publishers and researchers from 2007. These were made available to all schools from 2018, with participating publishers receiving government funding. In addition to published teachers’ guides, the Korean Institute of Curriculum and Evaluation (KICE) and various other bodies, including the National Curriculum Information Center and municipal/provincial offices of education, provide materials to help teachers understand and implement the curriculum. Teachers also have access to digital resource libraries and tools to support online lesson design through the EDUNET portal, and KERIS provides two online learning platforms for teacher- student interaction, the submission of assignments, creation of portfolios, and records of student learning.

Building a World-Class Teaching Workforce

This chapter has reviewed strategies these five jurisdictions have pursued over time to promote high-quality teaching in every classroom. Although these strategies differ somewhat from one jurisdiction to another, they also have much in common and suggest ways of building a world-class teaching workforce.

In most of these jurisdictions, teaching is a high-status occupation valued by the community and of similar standing to other highly valued professions. This status is reflected in strong competition for entry into teaching. The esteem in which teachers are held sometimes has its origins in teachers’ historical roles in nation building and the preservation of national culture and language but is also the result of calculated efforts to raise the status of teaching by increasing required academic qualifications, raising entry requirements, and creating working conditions appropriate to a profession.

Experience in these jurisdictions suggests that an important strategy for building a world-class teaching workforce is to proactively raise the status of teaching as a profession. One element of this strategy is to increase recognition of teachers’ crucial roles in unlocking human potential, creating the next generation of citizens, and laying the foundations for future standards of living and human well-being. Teachers not only make life-changing differences for individuals, they also develop the knowledge, skills, and

competencies essential to a nation's future productivity and prosperity. And they prepare the next generation of citizens for global challenges such as repairing the environment, managing health crises and natural disasters, resolving conflicts, and ensuring more equitable distributions of the planet's resources. In a world-class learning system, excellent teaching would be viewed not only as essential to successful student learning, but as critical to a nation's future.

A second strategy these jurisdictions have pursued has been to increase standards of preservice teacher preparation. The preparation of teachers has been moved out of earlier teacher training institutions into universities where teachers are prepared alongside other professionals. In some jurisdictions, preparation has been extended to 5 or 6 years of intensive study in the subjects that teachers will teach, child and adolescent development, pedagogical methods, and classroom management. These teacher preparation programs include periods of supervised practice, reflection, and analysis, and many teachers in these jurisdictions graduate with master's degrees.

An especially high priority is to ensure teachers have deep knowledge of the subjects they will teach. For secondary teachers, this means completing at least a bachelor's degree in their chosen discipline. Primary teachers, too, are expected to have high levels of content knowledge in relevant disciplines. This is a significant departure from past assumptions that completion of secondary school provided adequate subject knowledge for primary teaching. Requirements in these jurisdictions suggest that a world-class teacher preparation program would provide future teachers with deep knowledge of their subjects, developed through the study of those disciplines at university.

These jurisdictions also recognize that deep subject knowledge is necessary but not sufficient for teaching. Highly effective teaching depends on deep knowledge of how students learn a subject (that is, pedagogical content knowledge). This includes an understanding of typical paths of student learning; the role of prerequisite knowledge and skills in laying the foundations for further learning; an understanding of common errors and misunderstandings in learning a subject; skills in diagnosing and establishing the points individuals have reached in their learning; and knowledge of effective subject-specific interventions and teaching strategies. In these jurisdictions, teaching is viewed as much more than the delivery of content; it requires the active study of individuals' learning. Most of these jurisdictions place considerable emphasis in their preservice teacher education programs on developing pedagogical content knowledge, sometimes through collaborations between university education departments and other specialist departments. A world-class teacher preparation program would build deep pedagogical content knowledge, which would be further developed through teaching experience and in-service professional learning.

Some of these jurisdictions also build future teachers' skills in analyzing, reflecting on, and improving their own teaching, and in collaborating with other teachers as part of professional communities established to improve teaching practices. This requires competencies in innovating, experimenting, and evaluating the effectiveness of different teaching strategies. In some jurisdictions, these competencies are developed through a major piece of research undertaken as a part of the requirements for a master's degree. A world-class teacher preparation program would build future teachers' skills in undertaking meaningful research into their own practices.

A third strategy is to provide teachers with a clear career path that makes explicit what it means to become an increasingly expert teacher. At least one of these jurisdictions has done this by constructing a sequence of described and illustrated levels of increasing teaching competence. Underpinning this framework of levels is the expectation that teachers should become better over time at what they do. The levels provide a shared understanding of what more effective teaching looks like. In this way, teachers are given a frame of reference for planning their professional learning and against which their professional growth can be recognized. In a world-class learning system, teachers' career progression would be based not simply on

additional school-wide and administrative responsibilities, but on evidence of increasingly expert classroom teaching.

Finally, these jurisdictions have worked over time to create working conditions that make teaching an attractive career choice. Most jurisdictions have provided starting remuneration levels similar to those of other graduates. Some have ensured that salaries rise to levels that remain competitive after a decade of teaching. Efforts have also been made to reduce class sizes and teacher workloads, and to limit teachers' administrative responsibilities. Teachers have been given higher levels of autonomy over what and when they teach, and other professional activities such as sabbaticals, study tours, and opportunities for secondments and involvement in research have been provided as part of the professionalization of teaching.

Not all of these strategies can be found in all five jurisdictions, but considered together, they provide useful directions for building a world-class teaching workforce.

Questions for Reflection and / or Provocation

- ✓ A central feature of these systems is the high status and respect of the teaching profession. How do teachers in your system view the profession? How about the public? Are their views changing?
- ✓ Hong Kong has articulated competencies for the profession that guide professional learning. Does your school or system have or use standards like these? If so, do you think they reflect the full range of competencies excellent teachers need?
- ✓ Finland and Hong Kong have not only raised the rigor of teacher preparation but also made it more focused on practice over time. How does this compare to teacher preparation in your system? What mix of reforms might make preparation stronger and might attract more candidates to teaching?
- ✓ Korea has a position of Master Teachers for teachers with deep expertise who support professional learning for their peers. Does your school or system have opportunities for teachers to take on new roles and responsibilities for supporting their peers, without leaving the classroom?
- ✓ What features of the workplace make teaching attractive for teachers in your context? How do these compare with what is described in this chapter concerning pay, workload, autonomy and professional learning opportunities?

7

Comprehensive Student Support



Chapter Key Themes

- Equity and inclusion are deep commitments in these high-performing jurisdictions. This means that systems aim to offer full access to opportunities in school to all students; provide additional supports for specific demographic groups and to students from low-income families; and address individual learning needs and interests.
- There is a focus on learning and development from birth to the start of school. Investment in early learning has risen in the past decade, with the goals of raising participation, improving program quality, and increasing qualifications and pay of educators.
- All students have appropriately challenging learning opportunities to promote their growth, which include support to address gaps in learning, as well as extension opportunities for those who are more advanced in their learning. Growth is the object.
- Student support is individualized, rather than group-based. There is an emphasis on including all children in mainstream classrooms. Nevertheless, differentiating teaching for all can be a challenge in some systems.
- Another challenge some systems have faced is a growing proportion of immigrant families and the need to support their language and other learning needs. They have also expanded efforts to provide financial support to students from low-income families to ensure access to enrichment and outside of school learning opportunities.

An important component of a learning system is the set of supports a school system puts in place to help ensure that every student is fully included in schooling and has their learning needs identified and met. In these jurisdictions, these supports commence well before entry to school. Equity and inclusion are pursued first by ensuring that every student has access to high-quality early childhood education and care, high-quality schools and teaching, and high-quality educational support services. These jurisdictions also recognize that equity and inclusion require additional support for particular demographic groups such as immigrants, language learners, Indigenous students, and students from low-income families. Beyond this, equity and inclusion depend on recognizing and addressing students' individual learning needs, levels of attainment, interests, and aspirations.

Increasing Participation in High-Quality Preschool Learning

Over recent decades, these five jurisdictions have given increasing priority to learning and development in the period from birth to the start of school. This period has been recognized as a crucial phase during which essential foundations are laid and long-term learning trajectories are shaped. Early learning has been viewed as a vital part of the larger continuum of learning and has received growing attention from governments and ministries of education. A high priority has been to increase participation rates in early childhood education and care, and to improve access to quality learning programs, particularly for lower-income families and children living in rural and remote communities. As part of efforts to ensure equitable access, jurisdiction-wide curricula for early education have been developed and implemented in most of these jurisdictions, and progress has been made in ensuring every child is taught by a qualified early childhood teacher.

Improving access and participation

Early childhood education and care in these jurisdictions are provided within a broad framework of social supports for young children and their families. These supports sometimes commence before birth.

In British Columbia, education services for the early years vary between locations and include a range of service providers, such as health authorities, school districts, service organizations, and private agencies. In 2021, the Federal Government of Canada announced funding to subsidize the introduction of universal childcare across the country. The government's goal was to increase affordability and drive economic growth by drawing more women into the workforce (Tasker, 2021). British Columbia was the first province to conclude an agreement that will see, before 2027, childcare and early learning for children under six for an average of \$10 per day.

In Finland, maternity and child health clinics are run by municipalities under the Ministry of Social Affairs and Health. All newborn children are provided with a pack that includes basic clothing, toys, a book, and a baby care guidebook for parents. Hong Kong's maternal and child health centers provide free prenatal care services, including health education for expectant mothers, and Korea provides all expectant parents with a 'citizen happiness voucher' to cover expenses related to pregnancy and childbirth. Parents usually have access to universal health care and generous paid maternal and paternal leave schemes, which have been expanded in recent years. Ongoing support to children and their families can include free nutritional services; a monthly child allowance (up to age 7 in Korea, regardless of income, and up to age 17 for all children residing permanently in Finland); regular health checks for all children; and free school lunches (in Finland). These social supports are designed to enhance equity and to minimize educational disadvantages resulting from families' financial circumstances.

An objective in all jurisdictions has been to increase rates of participation in early education and care. This objective has been pursued by improving access to quality early childhood facilities throughout the jurisdiction; providing financial support to lower-income families; and raising expectations for children's

participation. In some jurisdictions the result has been a dramatic expansion of early education and care programs, and some of the highest expenditure levels in the OECD.

These jurisdictions typically provide free or heavily subsidized childcare for very young children, as well as preschool programs for children in the years immediately prior to school (see Box 7.1). In some jurisdictions, local municipalities are required to provide childcare and preschool places for all families wishing to access them. In Finland, most early childhood education and care is provided through municipal day care centers. In other jurisdictions, educational services in the early years are provided through a range of providers, including health authorities, school districts, service organizations, and private agencies. Childcare centers may be entirely privately operated, as in Hong Kong, and large providers may operate multiple centers (for example, the largest provider in Finland operates 160 subsidized childcare centers). In a number of jurisdictions, preschool education is also offered through privately owned kindergartens.

The increased priority governments have given to early childhood education and care has seen substantial growth in children's participation rates. Finland made preprimary compulsory for 6-year-olds in 2016, although almost all 6-year-olds already attended preprimary. In Korea, by 2017, about 95% of 3- to 5-year-olds were enrolled in preschool. In Estonia, 94% of children between the ages of 4 and 6 participate in preprimary education, and 71% of 2-year-olds are enrolled in childcare programs (the OECD average is 45%). And in Hong Kong, the government is actively working to increase families' access to childcare programs.

In addition to the goal of increasing overall participation, these jurisdictions have endeavoured to improve participation rates for disadvantaged children and children in rural and remote communities. One strategy has been to make early education and care freely available to all families. For example, British Columbia offers free full-day kindergarten for all 5-year-olds, and Hong Kong provides tuition-free half-day kindergarten for all 3- to 6-year-olds. Another strategy has been to provide government subsidies and/or fee relief. In Finland, private day care providers are publicly subsidized through vouchers, and fees in municipal childcare are adjusted for family income and the number of children in the family. In Hong Kong, low-income families can apply for fee remission for children enrolled in full day care. And Korea provides substantial subsidies to cover early childhood education for all children up to age 5. All these initiatives have been introduced in an effort to provide quality early learning and care to every family and every child.



In Summary

These five jurisdictions have given increasing priority to learning and development in the period from birth to the start of school. An objective has been to increase children's rates of participation by improving access to quality early childhood facilities throughout the jurisdiction and by providing financial support to ensure all children are able to participate and benefit. In some jurisdictions, the result has been a dramatic expansion of early education and care programs and unusually high rates of participation.

Box 7.1 Early Childhood Education and Care Arrangements

In British Columbia, all 5-year-olds have access to free full-day kindergarten, prior to compulsory schooling at age 6. There is no universal early childhood education program; education services for the early years vary across the province and involve a range of providers, including health authorities, school districts, service organizations, and private agencies. The province has established over 300 StrongStart Early Learning Centres for children up to age 5. These are located in schools in all school districts, and offer free, play-based education and support services. The provincial government has announced plans to implement an average of \$10 per day childcare and an early learning program for children under 6 years of age before 2027.

In Estonia, preschool is optional, but municipalities guarantee places in either childcare or preschool for all children between 18 months and 7 years, when compulsory school begins. Participation rates are high by OECD standards, with nearly 80% of 1- to 3-year-olds in childcare, and about 94% of 4- to 6-year-olds in preschool education. Parents pay fees for both childcare and preschool, capped at 20% of the government's minimum wage. Spending on early childhood in Estonia is among the highest in the OECD. The 1993 Pre-School Child Care Institutions Act introduced the possibility of private kindergartens.

In Finland, a year of half-day preprimary school was made compulsory for 6-year-olds in 2016, prior to commencing school at age 7. However, several municipalities also offer preprimary to 5-year-olds. Between 2005 and 2017, the participation rate of 3- to 5-year-olds in education and care increased from 68% to 79%, but remained below the OECD average of 87%, and well below other Nordic countries. Providers include early childhood education and care centers, family day care, and home care. Most children attend subsidized municipal day care centers where parents pay fees adjusted for family income and number of children. There is a growing number of higher-fee private providers subsidized through vouchers and charging fees not adjusted for family income.

In Hong Kong, privately-owned childcare centers provide care for children from birth to age 3. About half are government subsidized; in the remaining centers, profit margins are capped by the government. Low-income families can apply to the government for total or partial fee remission. There are long waiting lists, with only 5% of children under 2 years, and about half of 2- to 3-year-olds participating. The remaining children are cared for at home. This has become a government priority. For children aged 3 to 6, the Free Quality Kindergarten Education Scheme subsidizes half-day kindergarten and enrolment is almost universal. Low-income families receive subsidies for extended day programs. The government has also built kindergartens in public housing to improve access.

In Korea, the government has significantly expanded its early childhood education and care system, which has resulted in increased participation rates (now above the OECD average). This has included, since 2012, the introduction of a national preschool ('Nuri') curriculum. Preschool programs are provided for 3- to 5-year-olds, with about 95% of children enrolled. The government subsidizes the participation of all children, with the subsidy intended to cover half-day preschool. Preschool providers are able to charge additional fees. These are capped for most providers, but not for private kindergartens.

Improving preschool learning and development

As well as working to improve access to early education and care, and to increase children's participation rates, these jurisdictions have been working to improve the quality of teaching, learning and care in the preschool years. Key strategies have been to develop early years' curricula and objectives for every child's learning and development; to ensure continuity of learning and development from early care through preprimary into primary school; to more closely integrate early learning and childcare arrangements; to improve processes for monitoring children's learning and development, identifying individual needs, and intervening to meet those needs; and to develop a more highly qualified and expert early education workforce.

To ensure that all children have access to a quality early years curriculum, a number of jurisdictions have introduced a common curriculum that applies to both childcare and preprimary settings. For example, Estonia is bringing its childcare and preschool systems under the Ministry of Education and Research with the intention that all teachers will follow the same national curriculum, even though preschool institutions are run by local municipalities. Finland similarly transferred responsibility for childcare to the Ministry of Education to standardize the quality of care throughout the country and to strengthen the connection to primary education. And Korea replaced separate curricula for childcare centers (from birth to age 5 and overseen by the Ministry of Health and Welfare) and for its kindergartens (from ages 3 to 5 and overseen by the Ministry of Education) with a single, national curriculum known as the Nuri Curriculum for all children aged 3 to 5.

In all five jurisdictions, curricula have been developed to guide teaching and care in early learning settings. In British Columbia, an Early Learning Framework provides principles for children's learning, as well as guidance on specific topics. In Estonia, a national framework curriculum ensures a uniform approach to supporting the development of children throughout the country. Finland provides binding National Curriculum Guidelines for Early Childhood Education and Care, within which municipalities develop curricula, and a separate national core curriculum for preschool. In Hong Kong, too, kindergartens develop their own curricula with reference to the territory's Kindergarten Education Curriculum Guide. And in Korea, the National Standard Child Care Curriculum applies to all children up to age 2, and the Nuri Curriculum provides common educational expectations and experiences after that age.

Most of these curricula emphasize experiential and play-based learning, and children's social and emotional development. For example, Korea's Nuri Curriculum is designed to develop children in five areas: physical activities, health, and safety; communication; social relationships; arts experience; and inquiries into nature. Hong Kong's curriculum guide sets developmental objectives for children in six areas: physical fitness and health; language; early childhood mathematics; nature and living; self and society; and arts and creativity.

A priority has been to ensure continuity of learning from the earliest years of childcare, through pre-primary and into the primary years. Korea's Nuri Curriculum for 3 to 5-year-olds, introduced in 2012, was designed to align with and extend its National Standard Child Care Curriculum, and also to align with and prepare students for the primary school curriculum. Similarly, in updating its Early Learning Framework in 2019, British Columbia extended it to cover learning up to age 8 to ensure stronger alignment with the primary school curriculum. Hong Kong incorporated into its kindergarten curriculum the three components of its primary and secondary curricula (Values and Attitudes; Skills; Knowledge) to ensure coherence and continuity across the continuum of learning. And the Finnish curriculum for preprimary school is also designed to provide continuity from early childcare into primary school. Finland is going further and developing a more integrated approach to preprimary education and the first two years of primary school to form 'a more coherent system that allows pupils to move flexibly to the next level after they have gained the required basic skills' (Government of Finland, 2019, p. 176). For some children this might involve completing preprimary education over a 2-year period.

Increased participation rates in early childhood education and care have enabled the closer monitoring of every child's development to identify individuals who may benefit from additional support. In these jurisdictions, there is a strong emphasis on monitoring, personalization, and the early identification of issues. In Estonia and Finland, a personal development plan is developed for each child in consultation with parents and the child themselves. Early learning activities are planned, considering factors such as linguistic and cultural background, age, gender, and the child's state of health. In Estonia, progress against a personal development plan is reviewed at least annually, and the educational environment and activities are adjusted as required. In Finland, several screening methods are used, including teachers' field notes, and all children are assigned to one of three tiers of support. In addition, Maternity and Child Health Clinics undertake assessments of children's cognitive, physical, and social development prior to school. In Hong Kong, children receive regular checkups through the Health and Developmental Surveillance program, which monitors children's motor skills, language and communication, social behavior and play, self-care, vision, and hearing. Multi-disciplinary service teams that include social workers, speech, occupational, and physical therapists, and psychologists work with teachers and parents to support children with special needs.

British Columbia does not have regular developmental checks on children's progress following immunization at 18 months and prior to entry to kindergarten at age 5. However, each year the province administers the Early Development Instrument (EDI) to all children entering school. The EDI is a questionnaire completed by teachers and addresses five areas of development: physical health and well-being; language and cognitive development; social competence; emotional maturity; communication skills; and general knowledge. The questionnaire is a population-level research tool used in the planning and delivery of early childhood services across the province. One-third of children starting school are identified as vulnerable in one or more of the assessed areas.

Growing expectations that all children will have access to a high-quality curriculum that addresses a broad range of learning and development, coupled with expectations that teachers will closely monitor individuals' progress and provide personalized interventions and support, have raised professional requirements for early childhood teaching and care. In some jurisdictions there have been significant increases in these requirements. In Estonia, the preschool teacher qualification is now a 3-year bachelor's degree, with about 70% of teachers having some form of higher education (a major increase over the past decade). Among preschool teachers, 22% also have a master's degree that includes a research component. From 2017, the Estonian Government provided additional funding for preschool teacher salaries, seeing a doubling of some teachers' salaries and the average salary rising to 90% of the average primary teacher salary. A result has been stronger competition for entry to preschool teaching, with seven applicants for each place.

Finland, too, has comparatively high standards for early education teachers. Lead teachers and heads of childcare centers have bachelor's degrees and there is a requirement that at least two-thirds of teachers have a bachelor's degree from a university (early education teacher) or a university of applied sciences (social services or early education and care). In Korea, kindergarten teachers must complete at least a 2-year college degree specializing in early childhood education, leading to the same teaching certificate required for primary and secondary school teaching.



In Summary

These jurisdictions have given increasing priority to ensuring all children have access to consistent, high-quality early education and care. This includes access to an early years' curriculum that specifies common objectives for learning and development to be achieved through systematic teaching in play-based environments. Improved approaches to monitoring children's learning and development and identifying and responding to individual needs have been implemented. Parallel efforts have been made to increase the qualifications and remuneration of early childhood teachers and carers.

Creating a More Inclusive Learning System

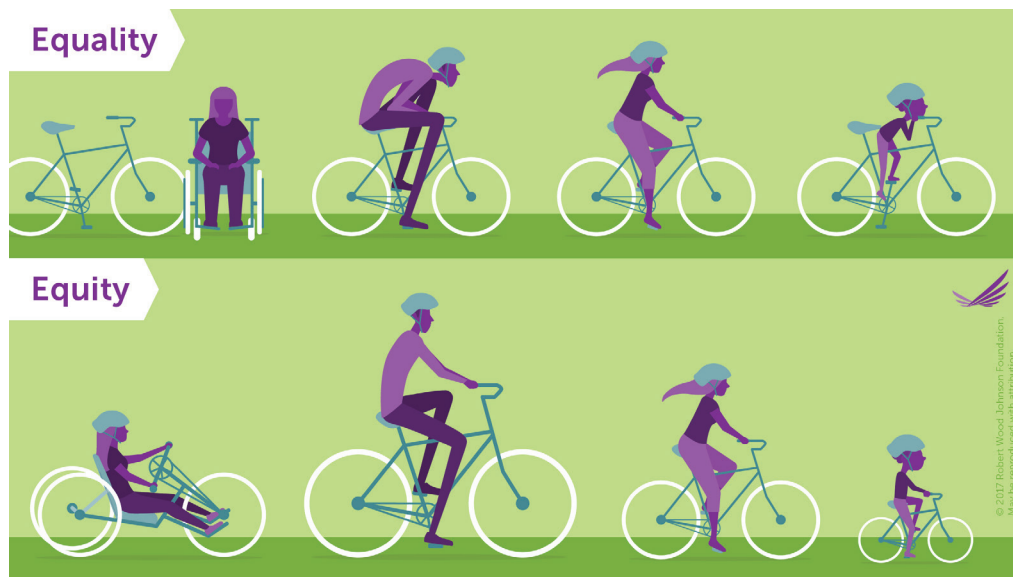
These five jurisdictions have given a high priority to ensuring that every student has an opportunity to learn successfully. Their intention has been that every student should make excellent ongoing progress in their learning and eventually achieve high standards, and they have recognized two basic preconditions for achieving this intention.

The first precondition is that no student is denied access to learning opportunities available to others. In practice, this has sometimes meant ensuring all students have equal access to programs and resources. For example, following the extension of compulsory schooling in Finland in 2021, all programs and learning materials, including laptops, were provided to students free of charge. It has sometimes also meant abandoning the streaming of students into different types of schools and instead giving every student access to a comprehensive public school, at least through primary and lower secondary school. Finland's abolition of selective grammar schools and introduction of comprehensive schools for all students in Grades 1 to 9 in the 1970s meant that no student was denied the learning opportunities required to pursue an academic track and possibly enter university. This precondition has also meant abandoning streaming within comprehensive schools, which similarly can deny students access to common learning opportunities. Following Finland's introduction of comprehensive schools, it initially streamed students into different tracks in key subjects at lower secondary level. However, it was soon observed that boys and students from lower socioeconomic backgrounds were disproportionately represented in the lower tracks, denying them access to the learning required to advance to the academic track in upper secondary school. As a result, streaming was discontinued. There has been a trend in these jurisdictions to eschew streaming because it is seen to impose a ceiling on how far some students can progress in their learning and so deny those students learning opportunities available to others. This is captured in Hong Kong's concept of 'one curriculum framework for all'.

Within comprehensive schooling arrangements that give all students access to the same curriculum, the second precondition is the creation of conditions conducive to each student's learning. When Finland introduced comprehensive schools and then abolished within-school streaming, the new challenge became one of building teachers' abilities to support the learning of a more varied cohort of students. Teachers had to differentiate their teaching to address students' varying levels of attainment and learning needs. This, in turn, required teachers who were able to establish where individuals were in their learning and to diagnose specific learning needs. And, in addition to teachers differentiating their teaching in this way, the creation of conditions conducive to each student's learning has meant understanding the role that cultural and language background, gender, and socioeconomic background can play in learning, particularly when these make success less likely. All five jurisdictions have recognized the importance of developing more inclusive learning systems by building stronger connections to individuals' starting points, backgrounds, and learning needs.

These two preconditions are illustrated in Figure 7.1. First, ‘inclusion’ depends on every student being included in common expectations. Every student is expected to be on the same path of learning and to make progress toward the same high standards. There are no side-tracks with different expectations for different learners; every student has access to a comprehensive school and progresses through the same curriculum. Second, ‘inclusion’ depends on each learner being provided with conditions conducive to their success within the common curriculum. Equity and progress depend on differentiation. This differentiation may require attention to a student’s current level of attainment, language background, culture, gender, socioeconomic background, or special learning needs, all of which can influence the student’s ability to engage effectively. The result may be different interventions and solutions for different students. In these high-performing jurisdictions, the role of schools and teachers is to provide this differentiation, but it is also recognized that there is much a school system can do to assist (or hinder) effective differentiation.

Figure 7.1 Ensuring Equity and Inclusion



Note. From “Visualizing Health Equity: One Size does not fit all. Infographic”, by Robert Wood Foundation, 2017 (<https://www.rwjf.org/en/insights/our-research/infographics/visualizing-health-equity.html>). Copyright 2017 Robert Wood Johnson Foundation. Reprinted with permission.

In practice, these two preconditions tend to have been addressed sequentially. The first priority has been to ensure that all students have access to education through comprehensive public schools that teach a common curriculum. With this in place, the second priority has been to ensure inclusion in the second sense—by addressing students’ varying circumstances and needs. For example, following its liberation in 1945, Korea focused first on expanding educational opportunities that had previously been suppressed. Then, having made significant progress on this objective in primary schools, from the 1960s, Korea shifted its focus to strategies for reducing gaps between different groups within its student population. Since the 1980s, education in Korea has sought to meet the needs of individuals and society, not to guarantee the same education for everybody.

In describing the development of their inclusion policies over recent decades, these jurisdictions sometimes refer to a shift from a ‘deficit model’ in which all learners initially were expected to meet the common expectations of the system to a model in which the system is expected to be more responsive to the needs of learners. For example, British Columbia has worked with Indigenous communities to better understand and address the varying needs of Indigenous learners. This has included recognizing traditional understandings of learning, such as learning being embedded in memory, history, and story; involving patience and time; and requiring exploration of one’s identity. These traditional understandings have been captured in a statement of First Peoples’ Principles of Learning. The general shift in these jurisdictions has been from a model based on the delivery of standard solutions to a model that requires teachers and schools to understand who their students are and how to meet their particular needs. Some in these jurisdictions link their performance as a school system to this strong commitment to equity and inclusion within a system of comprehensive schooling and a common high-quality curriculum for all.

To support teachers and schools to identify and respond to students’ varying circumstances and learning needs, these jurisdictions provide additional financial support for particular categories of students. These categories include students with special learning needs, language learners, Indigenous students, students in rural and remote locations, and socioeconomically disadvantaged students. Estonia also targets additional school funding to families with three or more children, and single-parent families, as part of its Strategy of Children and Families, and many Estonian local authorities offer ‘financial school support’ and ‘morning porridge’ to families and students requiring it. Finland also allocates additional funds to regions and school districts for the support of immigrant students, low-income students, students in single-parent families, and students with parents who are unemployed or undereducated.

Special government programs also have been introduced to support these students. For example, British Columbia, under its Framework for Enhancing Student Learning, requires every board of education to form local partnerships to support the growth and achievement of particular groups of students, most notably Indigenous students, children and youth in care, and students with disabilities or diverse abilities. Korea supports vulnerable students through a mentoring scheme run by university students; general learning clinics for low-income families, multicultural families, and North Korean defectors, as well as those who lack basic education; and access to Educational Broadcasting System courses, textbooks, and scholarships.

Despite the strong commitment of these jurisdictions to inclusion and equal opportunities for all students, there is evidence of growing inequalities in some jurisdictions. The Government of Finland observed in 2019 that ‘inequality, exclusion and differences in learning outcomes are beginning to threaten the Finnish success story’ and referred to growing inequalities ‘within and between schools, in larger towns, between regions, in learning outcomes between genders, and among first- and second-generation immigrant children and young people’ (Government of Finland, 2019, p. 177). Ensuring that every student makes excellent ongoing progress in their learning and achieves high standards remains a challenge—even in the jurisdictions that have been unusually successful in doing this.



In Summary

These jurisdictions have a strong commitment to equity and inclusion. They have pursued this commitment first by ensuring that every student has access to a comprehensive school and a common curriculum (at least in primary and lower secondary school), and then through the creation of conditions conducive to each student's learning. This has required attention to individuals' levels of attainment and learning needs, but also to factors such as language background, culture, gender, socioeconomic background, and special needs. Ensuring that every student makes excellent ongoing progress in their learning and eventually achieves high standards remains a significant challenge.

Reducing the impact of students' backgrounds on learning success

These jurisdictions have recognized that students belonging to particular demographic groups often have unique needs, and additional government funding and special programs have been introduced to support the learning of these students. Across these jurisdictions, an increasing priority has been given to addressing the needs of students who have recently arrived as immigrants or refugees. In several jurisdictions there has been a need for greater support for students with different language backgrounds. Other government programs have been introduced to address the needs of students living in rural and remote locations, to ensure the inclusion of girls and, more recently, to address the declining performances of boys. In British Columbia, there has been a strong focus on making schooling more inclusive of Indigenous students. And in all five jurisdictions, extensive efforts have been made to reduce the impact of socioeconomic background on students' success at school.

Meeting the needs of particular student groups

A recent challenge faced by most of these jurisdictions has been to cater for the learning needs of a growing proportion of students from immigrant families. British Columbia has been an exception with its long history of welcoming immigrants and integrating the children of immigrant families into its schools. Immigrant parents in British Columbia tend to be well educated and to have high expectations for their children who are more likely to progress to postsecondary education than non-immigrant students. In addition, the proportion of immigrants in British Columbia is high (around 30%) with 20% of the population speaking a language other than English at home. In large urban areas, such as Vancouver, the percentages are often much higher.

In Estonia and Finland, the numbers of immigrant students have been historically low, but recent increases in Finland have seen immigrant children grow to about 25% of the school population and, in some catchment areas, to more than 50%. Many recent immigrant families are socioeconomically disadvantaged, speak languages other than the languages of instruction, and some students are not literate in their own language. Finland has responded by providing immigrant students the opportunity to study their mother tongue for one or two hours each week. Hong Kong provides a 6-month full-time initiation program for new students to support the development of their Chinese language, English language, and other skills before school enrolment, as well as a 60-hour orientation program to support transition to full-time school. Korea provides targeted counselling and welfare services for students of immigrant families and North Korean defectors. For multicultural students (defined as having one Korean and one foreign parent), the ministry has developed the Global Bridge program to build connections with students' home countries and provides additional assistance through its Support Plan for Multicultural Education, including classes in Korean language and culture.

Despite such initiatives, achievement gaps between immigrant and non-immigrant students are a growing issue in some jurisdictions. In Finland, immigrant students significantly underperform non-immigrant students and there have been concerns that the concentration of immigrant families in particular neighbourhoods is resulting in more segregated schools. (In Helsinki, immigrant students make up almost half the student population in some schools.) In Korea, dropout rates are higher among multicultural and North Korean defector students, and acceptance of multiculturalism remains low.

Limited familiarity with the language of instruction is an obstacle to full inclusion for many newly arrived students. British Columbia faced this challenge following the Second World War when large numbers of immigrant and refugee students arrived from Europe. Hong Kong has faced this challenge more recently with an influx of non-Cantonese speaking students. And other jurisdictions are working to support and include growing numbers of immigrant and refugee students with varied language backgrounds. For example, Finland offers Finnish as a Second Language to students with immigrant backgrounds, including as a subject in the matriculation examination.

As part of its English Language Learners policy, British Columbia makes available additional funding to support non-English speaking students for up to five years, regardless of the grade in which they commence. This policy includes Standard English as a Second Dialogue support for Indigenous students. Hong Kong provides additional funding directly to schools to support students learning Chinese; runs a Summer Bridging Program for primary students and their parents; has established about 20 Chinese Language Learning Support Centers; and has introduced a Chinese Language Curriculum Second Language Learning Framework in primary and secondary schools as an alternative to the main Chinese Language Curriculum.

Special efforts have also been required to ensure the inclusion of students living in rural and remote locations in these jurisdictions. Korea passed the Act on the Promotion of Education in Island and Remote Areas in 1967 in an effort to improve the inclusion of students living in mountainous areas, remote islands, restoration districts, and mine areas. For much of British Columbia's history, school districts were funded from local taxes and provincial grants. Between 1983 and 1994, in response to escalating district expenditures and growing disparities between districts, the government centralized the collection of taxes, reduced the number of school districts, and centralized collective bargaining with the teachers' union. Funds were distributed equitably across school districts, including adjustments for schools in remote locations. School districts have been able to generate additional funds by levying additional school taxes, but only through referenda, an option that school districts have been reluctant to implement (Poole & Fallon, 2007; Ellis, 2022).

Historically, a challenge in most jurisdictions has been to ensure equal opportunities for girls. In some jurisdictions, a more recent concern has been the declining performance of boys. This trend has been particularly marked in Finland, where the gender gap in reading in the Programme for International Student Assessment (PISA) 2018 was one of the largest internationally; boys are increasingly disengaging from reading for pleasure; and girls significantly outperform boys not only in reading but also in mathematics and science. Persistent and, in some cases, increasing gender gaps present equity challenges in these jurisdictions. These gaps may be related less to access and opportunity than to perceived relevance, student motivation, and effort.

In British Columbia, Indigenous (First Nations, Métis, and Inuit) students make up 11% of the student population and speak a variety of languages within eight main language groups. The Federal Government historically has assumed responsibility for funding the education of Indigenous students. In the past, residential schools separated students from their Indigenous languages and cultures, but today funding is aimed at ensuring universal access to culturally appropriate education programs and services. The aim is to make schools welcoming places in which Indigenous students can see their cultures and traditions reflected and are confident in their self-identity. A First Nations Studies course, developed by Indigenous

people and introduced initially for First Nations students, is now available to all students, not only to learn about First Nations, but also to learn from First Nations. A First Nations Education Steering Committee, established in 1992 by First Nations leaders, and the First Nations Schools Association provide a wide range of support for Indigenous students' learning. In addition, Enhancement Agreements (EAs) between Indigenous communities and school districts monitor student enrolment levels, test scores, and graduation rates, and develop strategic plans for improvement. One result of these increased efforts to ensure equity and inclusion has been an improvement in Indigenous students' graduation rates from 39% to 69% over the past 2 decades. In some school districts, rates are higher and similar to non-Indigenous graduation rates.

In Summary

These jurisdictions have recognized that students belonging to particular demographic groups often have unique needs, and additional government funding and special programs have been introduced to support the learning of these students. Such groups include students from immigrant families, students with different language backgrounds, students living in rural and remote locations, and both girls and boys. There has been a strong focus on making schooling more inclusive of Indigenous cultures and traditions in British Columbia.

Ameliorating the impact of socioeconomic disadvantage

A major concern in all these jurisdictions has been to minimize the impact of socioeconomic disadvantage on educational outcomes. All jurisdictions have been acutely aware that poverty can be an obstacle to children's learning and development from birth (and sometimes prior to birth), and throughout the school years. They also recognize that many students from lower socioeconomic backgrounds suffer multiple disadvantages, including disadvantages associated with living in remote locations and resulting from different cultural and language backgrounds. All five jurisdictions have sought to provide every student with access to an excellent school and high-quality teaching, regardless of their family circumstances. In this way, they have endeavoured to minimize between-teacher and between-school differences and the impact of socioeconomic background on educational outcomes.

In addition to their goal of providing universal access to high-quality schools, teachers, and student support services, these jurisdictions have also introduced targeted initiatives to counteract the possible impact of lower socioeconomic circumstances on student learning and development. Differential support to low-income families and children is provided from the earliest years of life. Examples are British Columbia's provision of additional support to low-income families to access childcare through its Affordable Child Care Benefit, and Estonia's provision of additional family benefits to families considered to be at greater risk of poverty. And differentiated support continues throughout the school years and into post-school study. For example, to ensure no student is denied access for financial reasons, Hong Kong provides subsidies and low-interest or interest-free loans to students from low-income families enrolling in its Diploma Yi Jin, vocational training, sub-degree, and undergraduate programs.

Hong Kong has provided differentiated support for low-income students since the 1970s through its School Textbook Assistance Scheme (SA), which provides funding for textbooks and other school expenses, and the Student Travel Subsidy Scheme (STS), which provides funding for low-income students to take public transport to school. More recently, it has introduced a Subsidy Scheme for Internet Access Charges (SIA) to ensure equitable access for every student. And schools receive government grants for after-school programming—including extracurricular activities, tutoring, and activities designed to build skills like self-directed learning and goal-setting—for low-income students. Support is also provided by non-government organizations. For example, from 2004, the Hong Kong Jockey Club funded a Life-Wide

Learning Fund Grant designed to ensure disadvantaged students were able to engage in activities such as excursions, field trips, visits, and mainland and overseas exchanges.

Korea introduced the Dream Ladder Scholarship Program to assist students from low-income families. Targeted support is provided to students from the second year of lower secondary school on recommendations from principals and provides various forms of assistance, such as scholarships and educational camps, to enable low-income students to attend school and participate in extracurricular activities unhindered by family circumstances.

These jurisdictions have also recognized that, without care and intervention, schooling processes themselves can compound disadvantages for low-income students. In 2019, the Korean Minister for Education observed that education was now seen by many in Korea as ‘having been reduced to a means for parents to hand down their socioeconomic status and privilege to their children’ (Moon, J-I, 2019, para. 1) and that the most pressing educational challenge was to restore public trust in the fairness of education. Adding to this concern was the finding of the Korean Educational Development Institute that socioeconomic gaps in mathematics attainment widened as students moved through school and that this widening had become more marked over the past 2 decades (Kyung-Ho et al., 2017, cited in Lee et al., 2021).


In Hong Kong, too, the government recognized that its introduction of government-funded schools able to charge fees (known as ‘Direct Subsidy Scheme’ schools) in 2004 had the effect of attracting higher-income families to those schools. To counter this effect and make these schools more accessible to low-income families, the government requires Direct Subsidy Scheme schools to set aside at least 10% of their income from school fees to provide fee remission and scholarships. Eligibility for this support must not be stricter than the requirements of government financial assistance schemes for disadvantaged students.

The efforts of these five jurisdictions to minimize the impact of socioeconomic background on student learning and development have contributed to lower correlations between socioeconomic background and performance at school. In PISA 2018, these five jurisdictions were distinguished by having both a high level of average performance and a relative weak relationship between performance and socioeconomic background. In Hong Kong, only 5% of the variability in reading results was associated with students’ socioeconomic backgrounds, and in Estonia, only 6%, compared to the OECD average of 12%. In Finland, which was also below the OECD average, the socioeconomic gap widened between 2009 and 2018.



In Summary

A major concern in all these jurisdictions has been to minimize the impact of socioeconomic disadvantage on educational outcomes. In addition to their goal of providing universal access to high-quality schools, teachers, and student support services, these jurisdictions have also introduced targeted initiatives to counteract the possible impacts of socioeconomic background. Differential support to low-income families and children is provided from the earliest years of life and continues throughout schooling and beyond. These jurisdictions are also alert to ways in which educational processes themselves can compound socioeconomic disadvantage.



Improving Strategies for Meeting Individual Learning Needs

Equity and inclusion in these jurisdictions have been pursued first through efforts to ensure that every student has access to the same educational opportunities. The goal has been to ensure that all students have access to high-quality comprehensive schools; are taught by equally competent high-quality teachers; have access to the same high-quality supports and extracurricular opportunities; are taught a common high-quality core curriculum; and make excellent ongoing progress in their learning and eventually achieve the same high standards.

As noted above, within these general intentions, these jurisdictions have recognized that equity and inclusion also require differentiated support for particular groups of students, including immigrants and refugees, students who speak languages other than the language of instruction, Indigenous students, and children of low-income families. Extra, targeted funding and special programs for particular demographic groups form a second component of these jurisdictions' strategies for achieving equity and inclusion for all.

But these jurisdictions also recognize that students within broad demographic groups of these kinds do not all have the same needs. Not all immigrant students or students who speak a language other than the language of instruction are equally disadvantaged. Indigenous students may have quite different backgrounds and needs, and a student's socioeconomic background may be a poor guide to what they require. In fact, attempting to infer a student's learning needs from the group to which they belong—including their age group—can itself be a source of inequitable treatment. For this reason, these jurisdictions have given increasing priority to the third component of their equity and inclusion strategies—understanding and meeting the learning needs of individual learners.

Prioritizing individuals and their learning

There is a deep commitment in these jurisdictions to each student's learning, and an equally deep conviction that every student has the ability to learn successfully. But this has not always been the case. For example, in Estonia prior to its independence, the education of children with special learning needs was not considered a priority. As in most of the world, there was often a belief in these jurisdictions that a percentage of the student population was not capable of learning in the same way as other students or of ever achieving high standards. This was not seen as a problem because of the plentiful supply of low-skilled and manual work into which these students could move. However, more recently, there has been growing recognition of the urgency of ensuring that all students have opportunities and achieve educational standards once available to only some.

The commitment of these jurisdictions to every student's success has been underpinned by a fundamental belief that every student has a right to a quality education. It has been seen as the responsibility of society to ensure that this right is protected, and the responsibility of school systems, schools, and teachers to ensure that this right is fulfilled. Finland is an example of a nation with a long-standing commitment to seeing every student succeed. In jurisdictions with relatively small populations, such as Estonia, this commitment has been accompanied by a strong sense of every student's success being important to the nation.

There is also a deep conviction that every student has the ability to learn successfully. In Korea and Hong Kong, this belief has its origins in Confucian beliefs about the relationship between personal effort and success. Korean society tells students that they can succeed at school and in life if they study hard. But other jurisdictions send similar messages. A study in Finland in 2000 found that 51% of Finns believed that determination and perseverance were important qualities for students to learn at home (compared with 29% to 33% in Scandinavian countries) (Sahlgren, 2015). And in relatively young nations like Estonia, parents and students have seen education as the passport to a better life. Perhaps as a result,

Estonian students have unusually high levels of belief in their own capacity to learn successfully—often referred to as a strong growth mindset.

Accompanying this commitment to every student’s success and a belief in every student’s capacity to learn successfully has been recognition that each learner is unique. It is understood in these jurisdictions that students differ in many ways, including in their levels of attainment, learning needs, rates of progress, interests, and motivations. Equity and inclusion are seen to depend on recognizing and responding to this diversity of individual needs. This is often referred to in these jurisdictions as making teaching and learning more ‘individualized’, ‘personalized’, or ‘student-centered’. The aim is to maximize every student’s engagement and thus probability of learning successfully by tailoring learning experiences to individuals’ circumstances and needs (see Box 7.2).

Box 7.2 Personalized Learning

Personalized learning recognizes that no two students learn the same way or at the same pace. It also recognizes that for students to succeed in school—and to succeed after graduation—they must be engaged and invested in their learning. This means learning that is focused on the needs, strengths and aspirations of each individual young person. In a system that values personalized learning, students play an increasingly active role in designing their own education path as they develop and mature—while being held increasingly accountable for their own learning success.

(British Columbia Ministry of Education, 2015, cited in *Learning First*, 2018, p. 4)

This has far-reaching implications for teachers and teaching. In particular, teaching becomes much more than the process of delivering the same curriculum to everybody (often referred to in these jurisdictions as a ‘teacher-centered’ approach). Instead, an essential aspect of teaching is the process of establishing, understanding, and responding to where individuals are in their learning (a ‘student-centered’ approach). In Finland, this aspect of teaching was prioritized in the 1985 national core curriculum, which introduced personalized learning plans and encouraged teachers’ creation of learning opportunities to meet individual needs. In Estonia, the 2019 revision of the professional standard for teachers introduced ‘more emphasis on the teacher’s role in creating a learning environment supporting students’ well-being, analysing students’ individual needs, working with students with special needs, and adapting the learning process and materials accordingly’ (Eisenschmidt et al., p. 90).

Essential to more personalized teaching and learning is a sound understanding by teachers of where individuals are in their learning. Korea provides teachers with Subject Learning Diagnostic Tests to assist in identifying what individuals know and what difficulties they are experiencing. In Finland and Estonia, students usually have the same teacher through their first few years of school (usually through Grades 1 to 4). In this way, the teacher is able to build a deep understanding of each child’s learning and development, build a long-term relationship, monitor the child’s progress, and ensure their learning needs are met. In Estonia, students may also have the same teacher for several grades in the upper primary school, meaning that, in some schools, students have the same teacher from Grades 1 to 6. In addition, schools in these countries are often small enough for all children to be known by all adults in the school.

In these jurisdictions, student-centered learning involves not only establishing and responding to where individuals are in their learning, but also giving students greater agency over their own learning—for

example, by assisting individuals to set objectives for their learning, and to monitor and evaluate their own learning progress. It also involves building stronger connections to individuals' interests—for example by inviting students to identify topics and issues for study and investigation.

Teachers' abilities to respond to individual learning needs, interests, and aspirations depend on flexibility within the curriculum to do this, and also on the possibility of using time and space flexibly. The ministry in British Columbia has observed that an emphasis on personalization, coupled with a flexible curriculum structure, introduces the possibility of classrooms that consist of more than a single grade and of teachers seeing all students in the class as individuals with a range of needs and interests. Teachers in the province have been encouraged to recognize that learning can take place anywhere at any time and to use time and space in creative ways to better meet the needs and interests of individual learners. In other jurisdictions, too, the use of open, flexible learning environments in which several teachers work with larger groups of students has been seen as an opportunity to better differentiate teaching to address individuals' needs (for example, through the creation of small, within-class groups).

In Summary

There is a deep commitment in these jurisdictions to each student's learning, and an equally deep conviction that every student has the ability to learn successfully. This is accompanied by recognition that each learner is unique, and that equity and inclusion depend on recognizing and responding to the diversity of individual circumstances and needs. As a result, an essential aspect of teaching is to establish, understand, and respond to individuals and their learning (referred to as 'personalized' or 'student-centered'), to build stronger connections to individuals' interests and motivations, and to give students greater agency over their own learning.

Promoting targeted teaching and support

The intention in these jurisdictions that every student should learn successfully has resulted in the promotion of targeted teaching to address individual learning needs. For the least advanced students, this has meant providing remedial teaching and support to address difficulties and gaps in learning. For the most advanced students, it has meant providing extension material and stretch challenges appropriate to their higher levels of attainment. For every student, the aim has been to provide well-targeted and appropriately challenging learning opportunities to promote further growth.

The priority these jurisdictions have given to targeting individuals' learning needs is consistent with research showing that the likelihood of successful learning is maximized when teaching builds on what learners already know and can do (see Box 7.3). Learners are less likely to learn successfully if taught what they already know or if taught what they are not yet ready to learn because they lack prerequisite knowledge. In promoting targeted teaching, it is common to invoke Vygotsky's concept of a 'zone of proximal development'—a region of learning challenges beyond a learner's comfort zone, but not so far beyond that the learner is unable to engage meaningfully.

Box 7.3 Targeted Teaching

If I had to reduce all of educational psychology to just one principle, I would say this: the most important single factor influencing learning is what the learner already knows. Ascertain this and teach him (sic) accordingly.

(Ausubel, 1968, p. vi)

In these jurisdictions, a very high priority has been given to targeting the needs of the least advanced students, who are commonly referred to as ‘struggling’, ‘underachieving’, or ‘slipping behind’. In most jurisdictions, somewhat less attention appears to have been given to ensuring that the most advanced students also are provided with well-targeted teaching and support.

Finland’s strong emphasis on addressing the needs of the least advanced students can be traced to its introduction of the comprehensive school in the 1970s. At that time, it was recognized that students who had previously pursued the less academic path were likely to have difficulty with the more demanding grammar school curriculum, and greater emphasis was given to preparing teachers to differentiate their teaching and to provide remedial teaching to students who required it. But the provision of targeted support to the least advanced students has been a priority in all these jurisdictions. For example, Korea has become increasingly concerned about ‘underachievers’, and evidence that their learning deficits accumulate as they progress through school. By 2018, 42 model schools had been established in Korea to identify and disseminate excellent models for individualized education for ‘underachieving’ students.

Strategies to provide targeted teaching and support include the appointment of additional teachers to work with students who require extra assistance. In British Columbia, classroom teachers can refer students to the school’s learning assistance teacher whose role is to support students experiencing learning difficulties. The learning assistance teacher works with the classroom teacher to design supports, which can include short-term individual or small group remedial teaching. School districts in British Columbia also receive funding to provide summer learning, which can include remedial courses. In Estonia, too, additional assistance is provided for remedial teaching, which often involves withdrawing students for small-group teaching. And in Hong Kong, the Education Bureau provides additional teaching positions to secondary schools with high numbers of academically low-achieving students.

In Finland, special education teachers work with students who require additional support, either in small groups or as co-teachers in regular classrooms. For students in need of significant support, an individual learning plan is developed, which includes special education classes and individual guidance. Almost a quarter of all Finnish students receive support from a special education teacher in any given year. In addition, Finnish schools establish multi-professional care groups consisting of teachers and other professionals such as the school psychologist, social worker, and school nurse. This group meets regularly and is an important part of individualized support for students. It discusses the progress of individuals upon the request of their teachers and assists families to source external professional services if required.

A variety of other strategies are used in these jurisdictions to support targeted teaching and support for less advanced students. Hong Kong provides primary schools with a Learning Support Grant (LSG) based on the number of ‘struggling’ students in the school. A struggling student is defined as one who is two or more years behind in at least two of Chinese, English and mathematics. Schools use the grant to fund small-group teaching, brief pull-out programs, and after-school teaching.

Estonia has established a national network of counseling centers known as Pathfinder Centres that provide out-of-school support and guidance for students with learning difficulties. These centers provide access to specialist services such as speech therapy, psychological counseling, social work services, and career and education counselling for older students.

Korea has introduced a number of initiatives to target the learning needs of ‘underachieving’ students. These include learning clinics established across the country to provide customized, out-of-school learning support to diagnose and address individuals’ learning difficulties. Schools with 10% or more of underachieving students are designated as ‘Do-Dream’ schools and are given additional funding and staff to address the needs of underachieving students. The Korea Institute for Curriculum and Evaluation has collaborated with the ministry and local offices of education to undertake research into underachievement and to develop a program for diagnosing, addressing, managing, and preventing underachievement. And

the Korean Government has introduced initiatives to discourage underachieving students from dropping out of school, including personalized supports and counseling.

Despite the priority these jurisdictions have given to targeting the needs of less advanced students, and the overall high performance of students in these five jurisdictions, a significant percentage of 15-year-olds still perform at levels considered unacceptable. In PISA 2018, between 11% and 15% of students in these jurisdictions performed below the minimum level of proficiency in reading, and between 9% and 15%, below the minimum level of proficiency in mathematics. These students often had difficulty with reading material that was unfamiliar to them or that was of moderate length and complexity, and did not demonstrate the ability and initiative to use mathematics in simple real-life situations (OECD, 2019b).

In addition to efforts to address the learning needs of their least advanced students, these jurisdictions also provide varying degrees of support for their most advanced students, who may be referred to as ‘talented’ or ‘gifted’. In Estonia, if a student is considered gifted, an individual curriculum is provided and students are given additional instruction, sometimes through special academies established by the universities. There are also some specialized schools, such as Tallinn Music High School, Nõo Secondary (Science) School, and specialized classes in subjects such as art, English, and chemistry at particular schools.

Korea also has specialized schools in areas such as physical education, arts, and science. These schools have a level of autonomy in relation to the curriculum and teaching, however if they do not follow the national curriculum, their students can have difficulty entering the next level of school in Korea. Teachers in some jurisdictions may also encourage more advanced students to take on challenges beyond the expectations of the curriculum, for example, by participating in international Olympiads or competitions such as those run by Finland’s History and Social Studies Teacher Association and Mathematics Teacher Association.

Hong Kong uses a three-tier approach to address the learning needs of more advanced students. Tier 1 involves embedding challenging learning content such as higher-order thinking skills, creativity, and personal-social competence into the curriculum for all students, and differentiating teaching to provide enrichment and extension activities for groups of students within regular classes. Tier 2 involves short school-based pull-out programs for more advanced students that are either general in nature or subject-specific. And Tier 3 involves out-of-school support programs organized by tertiary institutions and other education organizations. In 2019, the government provided additional funding for gifted education, including for out-of-school advanced learning programs.

Despite these initiatives, in most jurisdictions, provisions for more advanced students appear to be left to the discretion of teachers, to be available to relatively small proportions of the student population, or to be limited to one-off events. Most students appear to work only to the expectations of the curriculum for their grade. As a result, the learning needs of many advanced students may be inadequately met. For example, in Estonia, it is estimated that about half of all ‘talented’ students go unnoticed or undeveloped, in part because teachers are focused on providing support to underachieving students (Sepp, 2010, cited in Eisenschmidt et al).

In Summary

In these jurisdictions, a very high priority has been given to targeting the needs of the least advanced students, who are commonly referred to as ‘struggling’, ‘underachieving’, or ‘slipping behind’. Supports include the provision of additional teachers, out-of-school diagnostic and support services, and special funding and school programs. In some jurisdictions, less attention appears to have been given to ensuring that the most advanced students also are provided with well-targeted teaching and support.

Meeting every learner's needs

An objective in these jurisdictions has been to see each student as an individual with a particular set of learning needs. Increasingly, efforts are being made to address individuals' needs with minimal categorizing and labelling of students. Instead, the focus has been on clarifying and describing the forms of support available to students, and the processes for deciding the level of support an individual requires and how it will be provided. In some jurisdictions, this is reflected in the concept of a continuum of supports divided into tiers.

One consequence of this approach has been a declining tendency to identify a percentage of students as having 'special' needs. Each student is considered unique and to have unique needs. For example, Estonia's Basic Schools and Upper Secondary Schools Act defines special needs as needs requiring any adjustment to subject matter, teaching and learning processes, duration of teaching and learning, student workload, or learning environment. Such needs may be the result of issues such as long-term absence, health issues, behaviour, language background, immigrant status, and diagnosed learning difficulties. Students who are more advanced in their learning are also recognized as having special needs. Schools and teachers are expected to identify when and how teaching should be adapted and/or additional support should be provided to individual learners.

Finland also uses the term 'special education' to apply to a broad range of learning supports. Special education teachers work with students who require additional support. This may involve co-teaching in regular classrooms or providing additional teaching to individuals or small groups. Almost a quarter of Finnish students receive 'special' support of this kind each year, and almost half receive such support during their schooling. It also involves the full-time teaching of small classes of up to 10 students who require more intensive support. Teachers providing both forms of support are referred to as special education teachers and receive the same training.

A second consequence of efforts to minimize the categorization and labelling of students has been the inclusion of almost all students in mainstream schools and classes, accompanied by additional resources and professional support to enable this. There has been growth in the number of schools with school psychologists, social workers, speech therapists, and nurses. In some jurisdictions, the number of schools catering only for students requiring high levels of support has been reduced as more of these students have been mainstreamed.

However, some schools continue to cater for students requiring high-level support. For example, Finland has 12 separate schools for students with severely delayed development, severe handicaps, autism, dysphasia, and visual or hearing impairment (about 1% of the student population). Similarly, about 1% of Korean students attend separate schools providing intensive support. Korean students with mild to moderate needs are enrolled in mainstream schools, sometimes in separate classes (the number of special classrooms within mainstream schools has increased by more than 40% since 2007). And slightly more than 1% of students in Hong Kong are in special schools.

A third consequence has been the development of more systematic approaches to identifying and describing the supports available to students and for deciding the level of support an individual requires. Hong Kong and Finland have both developed three-tier models for doing this. Finland's model was introduced as part of a major reform in 2010 that saw the majority of students with learning or behavioral difficulties—who had previously been in special classes—incorporated into regular classes. Tier 1 support occurs in regular classrooms in the form of differentiated teaching, flexible groupings of students, remedial instruction, and co-teaching of individuals or small groups. If this level of support is inadequate, then in consultation with parents and the student, Tier 2 support is provided in the form of intensified individual support. If this second level of support is inadequate, a multi-professional team undertakes an evaluation leading to an official decision to commence an individual education plan. In

Tier 3, students can continue in their regular classes or be placed part time or full time in small groups. Supports are similar to supports at the lower levels, but with increased intensity.

In Hong Kong's model, Tier 1 involves addressing learning difficulties through quality teaching in regular classrooms. Tier 2 provides interventions for students with persistent learning difficulties through small-group teaching and pull-out programs. And Tier 3 involves the development of an individual education plan and intensive individualized support. Schools have Special Educational Needs Coordinators (SENCOs) to lead the school's student support team. The Education Bureau also operates two Special Education Services Centers that provide resources and online training for teachers in implementing the three-tier model.

The early identification of individuals' needs and adaptations of the common curriculum to cater for those needs are key elements of these jurisdictions' approaches. For example, Hong Kong has an early identification and intervention of learning difficulties program for first grade children to ensure the early identification of needs. Through this program, teachers observe children for the first few months and then administer an observation checklist. And Estonia provides a simplified national curriculum for students with mild, moderate, and profound learning difficulties.

In Summary

An objective in these jurisdictions has been to see each student as an individual with a particular set of learning needs, and to address those needs with minimal categorizing and labelling of students. Efforts have been made to include almost all students in mainstream classes, with accompanying resources and professional support; to map the increasing supports available to students and the processes for deciding on individuals' needs; and to provide teachers with screening assessments and curriculum adaptations to ensure every learner's needs are met.

Building World-Class Student Support

This chapter has reviewed the strategies these five jurisdictions have pursued to ensure that every student's learning needs are identified and met, and that every student makes excellent ongoing progress in their learning. Such strategies are an essential component of a high-quality learning system. Importantly, in these jurisdictions, meeting students' learning needs and ensuring every student's success is not viewed only as a task for teachers and schools; it is a high priority for the school system itself. The jurisdiction-wide strategies these jurisdictions have developed and implemented are no doubt important contributors to their high performance and provide valuable guidance in building world-class student supports. Several observations can be made about the approaches these jurisdictions have taken.

One observation is that support for students begins in the earliest years of life. A world-class learning system recognizes that foundations are laid, and long-term trajectories of learning and development are established, well before children commence school, and that children who are behind on entry to school sometimes never catch up. The observations in this chapter suggest that world-class support begins at or before birth, through prenatal care services, financial support for expectant and new parents, and regular health checks on children's development. Free or heavily subsidized childcare is provided to all children and their families, efforts are made to increase participation rates in early childhood education and care, and almost all children attend high-quality preschools by the age of 4.

Experience in these jurisdictions also highlights the importance of providing high-quality teaching in the years prior to school. These jurisdictions have developed early years' curricula and explicit objectives for every child's learning and development. The closer integration of childcare and early learning have

been high priorities, as has ensuring continuity of learning and development from early care, through preprimary school, and into primary education and beyond. Monitoring the progress of individual children, diagnosing learning needs, and intervening to meet those needs have required high levels of professional expertise, and these jurisdictions have worked over time to build a more highly qualified and expert early education workforce, including by increasing remuneration levels for early childhood teachers.

Another observation is that there is a strong commitment in these jurisdictions to every student's success and a strong conviction that every student is capable of learning successfully. This results in unusual efforts to ensure that each student's needs are identified and met, and that no student falls behind in their learning. Access, inclusion, and success are viewed as every student's right. It is recognized that students come to school from different backgrounds and circumstances and are often at quite different stages in their learning with different learning needs. Over time, a trend in these jurisdictions has been from providing the same educational experiences to every student to adapting the schooling experience to individuals' circumstances and needs. Some in these jurisdictions describe this as a shift from 'fitting students to the system' to 'fitting the system to students'. There is an understanding that inclusion and equity are not achieved by treating all students equally, but by establishing, understanding, and meeting learners' varying learning needs.

Equity and inclusion in these jurisdictions have been pursued through three broad strategies. Each of these strategies is likely to be essential for building a system of world-class student supports.

A first strategy has been to ensure that every student has access to a high-quality school, high-quality teaching, and high-quality support services. The intention has been that no student should be denied access to the learning opportunities available to others. In practice, this has meant replacing earlier schools that prepared students for different destinations (usually academic and vocational) with a single comprehensive school attended by all students, at least until the end of lower secondary school. It has also meant abolishing or reducing the streaming of students into different within-school tracks, some of which set limits on how far individuals could progress in their learning. Instead, in these jurisdictions, every student is expected to make excellent progress through the same high-quality curriculum in the primary and lower secondary years, and eventually to achieve the same high standards.

These jurisdictions also provide various forms of support to all students to help ensure that some are not disadvantaged by their circumstances. Examples include the universal provision of a daily hot meal and free regular health and dental checks.

A second strategy these jurisdictions have pursued has been to provide differentiated support to students from particular demographic groups. They have recognized that some student groups have unique needs, and additional government funding and special programs have been introduced to support the learning of these students. These groups include children of immigrant and refugee families, students who speak languages other than the language of instruction, Indigenous students, students living in rural and remote locations, and students from lower socioeconomic backgrounds. Historically, the full inclusion of girls was also a priority, but more recently, some jurisdictions have been concerned about the increasing disengagement and declining performance of boys.

An especially high priority has been given to ameliorating the impact of socioeconomic disadvantage on educational outcomes. Differential support to low-income families and children is provided from the earliest years of life. Financial support, for example in the form of subsidies for textbooks and travel to school, scholarships, and support to participate in extracurricular activities, is provided to children from low-income families in a number of these jurisdictions. There is also recognition that the structures and processes of schooling can themselves reinforce and exacerbate socioeconomic disadvantage, and steps are taken to minimize this possibility (for example, by requiring selective schools to make places available for students from low-income families).

A third strategy is based on recognition that, even within demographic groups, students do not all have the same learning needs, and that equity and inclusion also depend on understanding and meeting the needs of individual learners. This is often referred to in these jurisdictions as making teaching and learning more ‘individualized’, ‘personalized’, or ‘student-centered’. The aim is to maximize each student’s engagement and thus probability of learning successfully by tailoring learning experiences to their circumstances and needs. As a result, teaching becomes much more than the process of delivering the same curriculum to everybody; an essential aspect of teaching is the process of establishing, understanding, and responding to where individuals are in their learning. This strategy also involves giving students greater agency over their own learning—for example, by assisting individuals to set objectives for their learning and to monitor and evaluate their own learning progress—as well as building stronger connections to students’ interests and aspirations.

Experience in these jurisdictions suggests that a system of world-class student supports will emphasize the targeting of teaching on individual learning needs. A high priority will be given to ensuring that the needs of the least advanced students are addressed through targeted remedial teaching and support to address individual difficulties and gaps in learning. A high priority also will be given to ensuring that the needs of the most advanced students are addressed through extension materials and stretch challenges appropriate to their higher levels of attainment. And the school system will provide a wide range of supports for students with more extensive learning needs, usually within mainstream schools, but also in special schools and classes as required.

Questions for Reflection and / or Provocation

- ✓ In Finland, there are individual learning plans for children in preschool developed with families. How might plans like that make a difference for children before they come to school?
- ✓ Preschool teacher training is a competitive program to enter in Estonia. What is the profession like in your school system or systems you work with? How do you think this reflects the priorities of your education system?
- ✓ British Columbia has prioritized not only ensuring equal opportunities for Indigenous students, but also honoring their history and culture in schools. Are there lessons to take for your school or system efforts to provide equity for a particular student population?
- ✓ Do you think your school or system meets individual student learning needs well? Are there any practices highlighted in this chapter that might be useful in considering how to better address students' individual needs?
- ✓ In Hong Kong and Estonia, students who advance through the curriculum faster than other students are designated as special needs and offered individualized curriculum. How are advanced students accommodated in your schools or system? Are they well served?

8

Strong Leadership of Learning



Chapter Key Themes

- Leadership of education is distributed and seen as a collective responsibility.
- Leadership includes advocating for the moral purpose of schools to ensure that students needs are met and that they are prepared for further learning, work and life.
- Responsibilities of school leaders have expanded over time, as systems moved from centralized to more school-based management. Leaders are now expected to reflect on their own practices and their schools' practices and develop improvement strategies. This is in parallel with a reduction in external review of schools, which has become more focused on struggling schools, targeted inquiries or licensing issues.
- There is an expectation that principals will provide pedagogical leadership by building a culture of learning within the school and supporting the professional development of teachers.
- Systems have increasingly supported development of school leaders, through preparation programs, standards for the profession, and on-going learning and support.

Effective educational leadership is an essential component of a learning system. Outstanding leaders lead and inspire learning communities to make ongoing improvements in their practices. They promote monitoring and self-reflection, provide visionary strategic thinking for school improvement, and develop and introduce innovations that result in improved teaching and learning and better student outcomes. The role of principals in these five jurisdictions has shifted over time from a predominant focus on school administration to a greater focus on enhancing the quality of teaching and learning and improving student outcomes. Beyond this, school leaders are being expected to play a larger role in education reform efforts, including the reform and redesign of jurisdictions' learning systems. This includes leading curriculum reforms that prioritize deep learning and the development of the whole child, including their social and emotional development; creating more equitable learning environments and educational processes; making more effective uses of new technologies; and establishing partnerships with a wide range of external stakeholders to drive improved learning and outcomes.

Providing Increased Support for School Improvement

Improved educational outcomes depend on ongoing improvements in the work of schools and, in particular, on improvements that have an impact on the quality of day-to-day teaching and learning. Strong leadership shapes the work of schools. Over time, these jurisdictions have looked to school leaders and district and municipal education offices to take greater responsibility for leading local school improvement. This has led to the decentralization of school inspections and reviews. It has also led in most jurisdictions to increased support for local planning and school self-review processes.

Decentralizing school monitoring and evaluation

All these jurisdictions once had centralized school inspections. Often these were linked to school accreditation processes, with schools being inspected to ensure that they met standards for accreditation. Inspectors of schools were centrally trained, and inspections were comprehensive, sometimes being conducted over 1 to 2 weeks.

Over time, most jurisdictions have replaced central school inspections with locally conducted school reviews (see Box 8.1). Responsibility for school reviews may initially have been shared between the ministry and local education offices. The delegation of responsibility for school reviews has been part of a more general devolution of responsibility for overseeing the work of schools to local offices and schools themselves. Central inspectors in some jurisdictions have been replaced by local review teams, usually consisting of school leaders, teachers, and perhaps members of the broader school community. Other factors contributing to the decentralization of school monitoring and evaluation have included the costs of conducting central inspections, the workload and documentation requirements of some external review processes, and opposition from teacher unions.

External school reviews continue to be conducted in a number of jurisdictions. In Korea, reviews have been delegated to municipal or provincial offices, with every school being reviewed every 1 to 3 years. Korea's Elementary and Secondary Education Act requires inspections to focus on schools' implementation of the curriculum, teaching and learning methods, educational activities, and student achievement. In Hong Kong, schools are sampled randomly for external review, with each school being reviewed every 4 to 6 years. However, the purpose of reviews in Hong Kong is largely to examine the effectiveness of the school's internal self-evaluation processes. In several jurisdictions, schools can also request an external review, and many do.

In other jurisdictions, comprehensive external reviews have been progressively replaced by more targeted reviews. For example, Estonia replaced regular reviews of all schools with reviews of samples of schools and then, more recently, with reviews only in response to concerns and for the purposes of licencing schools. Reviews are conducted when there are complaints, or when school data suggest that a school is 'at

risk' and requiring review. Some jurisdictions conduct thematic reviews through which the system gathers information about particular areas of practice. For example, Estonia's sample-based reviews gathered information about schools' practices in areas such as teacher professional development and the provision of additional support for students requiring it. Finland also conducts sample-based thematic reviews, with results being used for evidence-based planning and policy development. And Hong Kong undertakes additional focus inspections, to review how schools are addressing particular topics and teaching particular subjects. In general, external review processes have become less focused on quality assurance, and more focused on identifying areas in which policy changes are required or schools require further support.

In British Columbia, a school accreditation process, consisting of an internal evaluation conducted by the school followed by an external school review, was discontinued in 2002. More recently the province has introduced a Framework for Enhancing Student Learning that requires school districts to develop multi-year improvement plans. Finland also places strong reliance on schools' self-evaluations.

There are concerns in some jurisdictions that quality assurance processes have been weakened over time, and that school reviews are being conducted with varying degrees of rigor and comparability across local education offices and schools. There are also concerns that some external review processes are becoming less focused on collecting rich evidence about what is happening in schools (for example, through in-depth interviews), and more focused on the use of compliance checklists to record presence or absence of specific aspects of a school's work.

And there are differences in policies concerning the public reporting of school reviews. Generally, reports are made public but, in some cases, they are confidential to the school.

Box 8.1 Decentralizing School Monitoring and Evaluation

British Columbia conducted a school accreditation process for its secondary schools from 1938 and for its elementary (K–7) schools from 1994. Under this process, schools conducted an internal evaluation that was followed by an external review. The external review team, initially consisting mainly of district superintendents, evaluated schools against provincial accreditation standards. By the 1990s, this had evolved into a school planning process that included parents, students, and the broader school community. External inspections required schools to produce extensive documentation. The process was simplified in 2000, but escalating costs and ongoing opposition from the Teachers Federation contributed to its cancellation in 2002. Subsequent efforts were made to improve district accountability under the province’s Accountability Framework. This was replaced with the Framework for Enhancing Student Learning, which requires districts to develop multi-year improvement plans.

Estonia conducted regular, external school inspections prior to 2006. These were largely discontinued from that time, with inspections conducted only in response to complaints, for the licencing of new schools, and to issue private schools with a permanent licence. The ministry’s External Evaluation Department conducted sample-based inspections of about 10% of schools each year on specific themes such as teacher professional development and support for individual students. In 2014–2015 the focus was shifted from samples of schools to the lowest-performing (‘at risk’) schools based on student performance, dropout rates, percentage of grade repetition, and public complaints. The Estonian Lifelong Learning Strategy in 2020 proposed that the main form of evaluation should be schools’ self-assessments. The national focus is now on providing schools with reliable benchmarking data.

Finland had strong national and regional school inspectorates, which were dismantled in 1991 as part of a general reduction in central management and prescription, and an increase in school autonomy. The monitoring of schools is now the responsibility of local municipalities, and their processes vary across the country. Schools can request a quality review (in 2015, 57% of lower secondary principals reported an external review, compared to an OECD average of 75%). The Finnish Education Evaluation Center conducts educational evaluations, such as reviews of the implementation of national policies, and the collection of student performance data. It also provides support to schools to conduct their own self-evaluations. In 2017 it reported that many schools lacked a self-evaluation process or culture.

Hong Kong’s Education Bureau undertakes external reviews of random samples of schools, with each school being reviewed every 4 to 6 years. Schools are notified approximately 3 months in advance. The focus is on evaluating the effectiveness of the school’s self-evaluation in promoting continuous improvement, as well as its response to previous report recommendations. Kindergartens and primary schools are required to make review reports available to parents and other members of the school community, but reports for secondary schools are not made public. The

Box 8.1 Decentralizing School Monitoring and Evaluation (continued)

Education Bureau also conducts focus inspections to inform its policies (such as inspections of teaching and learning in particular subjects).

Korea conducted national school inspections until 2003 when the task was shared between the National Government, which planned inspections, trained inspectors, and monitored inspections, and municipal/provincial offices of education, which conducted inspections of schools. Since 2012, municipal/provincial offices have had greater autonomy following acts of parliament that gave increased responsibility to local superintendents. Korean schools are inspected every 1 to 3 years, usually by teams of experienced teachers and school leaders, who focus on the school's implementation of the curriculum, teaching and learning methods, educational activities, and student achievement. The results of school evaluations are reported publicly.

In Summary

There has been a general trend in these jurisdictions to replace central inspections of schools with locally managed school review processes. Although external reviews continue to be conducted in a number of jurisdictions, they may be focused on supporting schools' self-evaluations, limited to 'at risk' schools or school licencing processes, or undertaken in samples of schools to gather information about schools' practices to inform policy making. There are concerns in some jurisdictions that quality assurance processes have become weaker and less consistent.

Supporting schools' self-evaluations

As these jurisdictions have decentralized—and in some cases phased out—external inspections and school review processes, they have given increasing priority to schools' self-evaluation processes. The capacity of a school to reflect on its current practices, to identify areas for improvement, to plan and implement change, and to evaluate the effectiveness of change has been seen as essential to continuous improvements in the work of schools and student outcomes. However, the levels and nature of support these five jurisdictions provide for schools' self-evaluations vary markedly (see Box 8.3).

A trend in a number of jurisdictions has been to see it as the responsibility of individual schools to identify the areas in which change is required and to make the necessary changes. For example, consistent with its general approach to devolving greater responsibility to schools and municipalities, Finland provides very little direction in relation to self-evaluations and school improvement, although the ministry did publish quality criteria in 2011. In addition, schools are provided with a tool (TEA-viisari) for monitoring health and well-being.

In other jurisdictions, a trend has been to focus internal school reviews on student data and areas of weakness requiring attention. For example, British Columbia's local boards of education, which govern school districts, are required to develop multi-year plans and related individual school plans and to report on these annually. They are to report student outcomes and to put in place systems to continuously

improve outcomes for all students and to ‘improve equity for Indigenous students, children and youth in care, and students with disabilities or diverse abilities’ (British Columbia Ministry of Education, n. d., para. 1). The ministry publishes student outcome data for each school district annually and makes clear that the purpose of a school district’s planning and reporting is to ‘develop and implement actions to improve student outcomes’ (para. 5). Under the province’s Framework for Enhancing Student Learning, school districts are expected to address outcomes relating to intellectual, human and social, and career development. However, school districts are responsible for deciding how to do this within broad provincial guidelines.

Estonia adopts a similar approach, ensuring that schools have access to data, but leaving it to schools to decide how they respond to the data. The ministry sets performance indicators on which schools are expected to report to parents, the school community, and the ministry. These have been broadened to include indicators relating to student satisfaction, the prevalence of bullying, the use of digital solutions, unexcused absences, and the consistency of school grades with external examination results. Data are collected on well-being and the school environment. To assist schools in the collection of data, the ministry commissioned the development of satisfaction surveys for teachers, parents, and students. As a result, school leaders have access to very significant data, but there are questions about how highly data are valued by some principals, and how effectively the available data are used in some schools’ decision-making.

In contrast, Hong Kong focuses school reviews on the systematic evaluation of key aspects of a school’s practices and work, in addition to the review of students’ performances. Schools are supported to reflect on practices in school management, professional leadership, curriculum and assessment, student learning and teaching, student support, and the formation of partnerships. These areas of a school’s practices are conveyed in a territory-wide framework that identifies four major domains made up of eight areas for review, and performance indicators for each area (see Table 8.1).

Table 8.1 Hong Kong’s Framework of School Performance Indicators

Domains and areas	Performance indicators
Management and organization	
School management	<ul style="list-style-type: none"> • planning • implementation • evaluation
Professional leadership	<ul style="list-style-type: none"> • leadership and monitoring • collaboration and support • professional development
Learning and teaching	
Curriculum and assessment	<ul style="list-style-type: none"> • curriculum organization • curriculum implementation • performance assessment • curriculum evaluation
Student learning and teaching	<ul style="list-style-type: none"> • learning process • learning performance • teaching organization • teaching process • feedback and follow-up
Student Support and school ethos	
Student support	<ul style="list-style-type: none"> • support for student development • school climate
Partnership	<ul style="list-style-type: none"> • home-school cooperation • links with external organizations
Student performance	
Attitude and behavior	<ul style="list-style-type: none"> • affective development and attitude • social development
Participation and achievement	<ul style="list-style-type: none"> • academic performance • non-academic performance

Note. Adapted from “Performance Indicators for Hong Kong Schools for Secondary, Primary and Special Schools”, by Education Bureau, 2022, p. 1. Copyright Education Bureau 2022. Reprinted with permission.

Hong Kong also provides schools with a rubric (Unsatisfactory, Acceptable, Good, Excellent) for evaluating their performance in each of the six areas within the first three domains (see Box 8.2). Descriptions of practices illustrative of ‘Acceptable’ and ‘Excellent’ performance are provided for each of these six areas. (Box 8.2 shows an excerpt from the description of ‘Excellent’ school management.) Schools are able to use these descriptions to rate their own performances and to identify areas for improvement.

On the basis of this review, schools identify a small number of ‘major concerns’ to be addressed in their next 3-year school development plan. Schools then develop strategies for addressing these concerns, timelines, and targets, in consultation with the school’s stakeholders. These strategies inform annual school plans and the success criteria against which schools report.

Box 8.2 Levels of Performance for Rating a School's Work (Hong Kong)

Levels	Assessment criteria
Excellent	School work in the area in question is often characterized by major strengths, attainment of expected outcomes and outstanding performance, presenting an exemplary case worthy of dissemination.
Good	Strengths outweigh weaknesses in the area of schoolwork in question; the school is advancing steadily towards pre-set goals with pleasing outcomes.
Acceptable	School work in the area in question is marked by some strengths and some weaknesses. The school is advancing towards pre-set goals with some initial observable outcomes.
Unsatisfactory	School work displays major weaknesses in the area in question with undesirable outcomes; pre-set goals fail to be attained and immediate remedial action is required.

Description of 'Excellent' performance in school management (excerpt only)

The School Self-Evaluation (SSE) mechanism is well developed, and a self-evaluation culture is effectively promoted. The school recognises and appreciates the positive impact of SSE. It places due emphasis on outcome evaluation and reflection on teaching effectiveness as well as upholds the evidence-based principle in conducting SSE. The school conducts systematic and comprehensive review of its strengths and weaknesses, considering changes in societal expectations and education policies, its mission and vision as well as students' backgrounds and attributes. Based on the analysis of SSE data and findings and recommendations in inspection reports, appropriate development priorities are drawn up and work plans, with clear targets and practicable implementation strategies, are formulated. Subject panels and committees also actively formulate appropriate and concrete operational plans in line with the school development priorities. Appropriate evaluation methods and success criteria are developed for the priority tasks. Manpower and resources are effectively deployed, and external resources are strategically tapped to carry out the priority tasks. Grants for specific purposes are also suitably utilised. The overall planning by the school is thorough and comprehensive. The decision-making process is transparent with extensive teacher participation and full consideration of the views of other stakeholders. To enhance the accountability and transparency of school management, the public and stakeholders are properly informed of the effectiveness of school work through various channels.

Box 8.3 Supporting Schools' Self-Evaluation

British Columbia requires local boards of education to develop and implement multi-year district strategic plans and individual school plans. These plans are developed within the broad guidelines of the provincial Framework for Enhancing Student Learning. The focus of planning and reporting is on the continuous improvement of student outcomes in the areas of intellectual, human and social, and career development. Districts and schools are expected to identify and implement actions to improve outcomes. The ministry publishes data for each school district on the performance of all students, and on progress in achieving equity for 'Indigenous students, children and youth in care, and students with disabilities or diverse abilities' (British Columbia Ministry of Education, n. d., para. 1). Districts are required to publish annual public reports that include student outcome data.

Estonia encourages local strategic planning and decision-making and requires schools to undertake self-evaluations. There has been a shift over time toward more data-driven improvement, with the ministry setting performance indicators to provide information about individual schools. These indicators have recently been updated to include a broader range of evidence, such as information on schools' uses of digital technologies. These indicators are incorporated into a school report available on the Education Eye site. Since 2015 the ministry has commissioned the Education and Youth Board to develop national surveys on issues such as satisfaction, well-being, the school environment, and teaching and learning approaches. There is thus a large amount of data available to schools and an expectation that they will use this to monitor, benchmark, and make local improvement decisions.

Finland requires education providers and schools to have a plan for evaluation and development. However, there are no national directives in relation to self-evaluations, and providers have autonomy to decide on their own objectives. Schools in Finland are more likely than average in OECD countries to conduct self-evaluations but may opt for an external review instead. Every comprehensive school reports to a municipal authority, but authorities differ widely in their levels of oversight, meaning that it is very difficult to compare the quality of education being provided in different Finnish schools.

Hong Kong requires every public school to develop a 3-yearly school development plan that incorporates goals for improvement. Implementation plans and success criteria are specified in annual school plans. At the end of each year, schools conduct a self-evaluation of progress toward their goals and provide the school community with a school report. The Education Bureau provides a set of key performance measures in the areas of school management and organisation, learning and teaching, student support and school ethos, and student performance. An online information system also provides measures of the value added by secondary schools.

Korean schools undertake self-evaluations; however, these are generally a preparatory process to provide data for external inspections. Municipal/

Box 8.3 Supporting Schools' Self-Evaluation (*continued*)

provincial offices train students, parents, and teachers to undertake self-evaluations and prepare reports as part of a year-long process. Because each municipal/provincial office determines the information to be gathered, the timing of evaluations, and the evaluation process, these differ across the country. School self-evaluations are provided on school websites and are also used in curriculum planning and school improvement planning.

In Summary

These jurisdictions have promoted and provided support to schools' self-evaluations. The capacity of a school to reflect on its current practices, to identify areas for improvement, to plan and implement change, and to evaluate the effectiveness of change has been seen as essential to continuous improvement in schools' practices and student outcomes. However, the levels and nature of support provided by these jurisdictions vary widely. Some provide very little support for school planning and self-evaluations. Others focus on providing schools with performance indicators and ensuring all schools have access to quality school data. Hong Kong supports schools to undertake systematic evaluations of key areas of their work.

Deepening Leaders' Participation in Learning System Reform

Over recent decades, these jurisdictions have encouraged school leaders to play a more hands-on role in leading teaching and learning in schools, and to play a leadership role in jurisdiction-wide learning reforms. Increasingly, they have looked to school leaders to be part of a networked professional community committed to improving student outcomes through professional inquiry, deeper student learning, the elimination of inequities, cultural inclusion, sustainable solutions, innovation, and the development and maintenance of learning ecosystems.

Promoting principals' pedagogical leadership

There has been a general trend in these jurisdictions to expect principals to take greater responsibility for leading teaching and learning within their schools. Principals have been expected to do this by building school-wide learning cultures focused not only on student learning, but also on the learning of teachers and other school staff. In some jurisdictions, principals lead the development of the school's curriculum, oversee the quality of teaching and student assessment, and work with teachers to plan their professional development. These jurisdictions recognize that school leaders have an indirect impact on the quality of teaching and learning through the cultures they create and their support for teachers and their work.

Most principals are well prepared to provide leadership to teaching and learning through their prior experience as teachers. Some have spent considerable time in classrooms. In Korea, principals, on average, spend 30 years as teachers before becoming principals. In Finland, principals historically taught at least a few hours a week, and in small schools may have taught considerably more. As a result, Finnish principals were sometimes seen less as managers, and more as fellow teachers with school-wide responsibilities. This

has become less true as school sizes have increased due to school closures. Only in small rural schools do principals have direct involvement in teaching. And, because of the autonomy with which teachers work in Finland, principals rarely make direct observations of teaching.

These jurisdictions have given principals increasing autonomy and responsibility for managing schools, often including responsibility for staffing decisions, financial management, and school facilities. In some jurisdictions, this has reduced school leaders' abilities to lead teaching and learning within the school. There has also been a general increase in the use of managerial approaches such as setting targets for student improvement, collecting data, monitoring the school's performance, and evaluating the performance of individual teachers. Principals in Estonia have often become politically involved in local municipalities to secure support for their schools.

These jurisdictions vary considerably in the support they provide to aspiring principals and in their requirements for becoming a principal. Some have very few formal requirements and appear to provide relatively little support. Other jurisdictions or individual school districts require principals to include studies in educational leadership in their university qualifications. Some universities, school districts and the Principals and Vice Principals Association in British Columbia also offer short preservice courses for aspiring principals. Hong Kong requires aspirants to complete a Certification for Principalship that involves completing a needs analysis, undertaking a Preparation for Principalship program that includes an action research project, and assembling a professional development portfolio for assessment. In Finland, although there is not a strong tradition of leadership training, most principals now complete a national qualification for principalship by undertaking one of two available leadership training programs.

The expectation that principals will lead teaching and learning in schools is also sometimes conveyed in standards or frameworks developed to guide the work of principals. Hong Kong has developed Professional Standards that expect principals to be 'architects of vibrant learning organizations' and 'enablers of all-round growth and balanced advancement' (Committee on Professional Development of Teachers and Principals, 2015c, p. 2). British Columbia, through its Principals and Vice Principals Association, has developed leadership standards that include instructional leadership as one of four main domains. Leaders are expected to play 'an integral role in modeling, creating, and sustaining a community that supports all learners' (BCPVPA Leadership Standards Review Committee, 2019, p. 6). However, these standards are not legislated, and principals can be appointed without meeting them. Estonia has developed a School Leader Competence Model that provides principals with support in evaluating how effectively they are 'supporting the development of each student' within their school (Education Estonia, 2016; see Box 8.4).

These jurisdictions also vary considerably in their expectations for school leaders' continuing professional development. Some have developed frameworks to guide professional learning activities. These include British Columbia's Provincial Leadership Development Framework, which identifies five areas for development: building relationships, developing people, setting strategic directions, leading the organization, and ensuring accountabilities. They also include Hong Kong's Continuing Professional Development Framework and Korea's National Teacher Evaluation for Professional Development System, which includes guidelines for principals' professional development. However, the extent to which principals engage in professional development to enhance their instructional leadership varies significantly across these jurisdictions (see Box 8.5).

Box 8.4 School Leader Competency Model (Estonia) (excerpt only)

Competence: Supporting the development of each student

Supporting each student's development involves assessing their abilities and development and guiding and inspiring individual progress. With successful support, each student makes the most of their abilities and comes as close as possible to excellence in developing their skills and personality in order to adapt to the future needs of society.

	Excellent	Good	Poor
Belief that every student can succeed	Convinces all teachers that all students achieve the best possible learning outcomes through individual and inspiring teaching and takes responsibility for achieving this.	Convinces all teachers that all students achieve good learning outcomes when taught individually and inspiringly.	Believes that, through the mentoring of good teachers, most students can achieve good learning outcomes.
Individual support	Ensures the implementation of teaching methods that support each student's individual development and a support team that encourages each student to set High goals.	Ensures that each student's individual development is supported by learning methods and a support team that supports each student's learning motivation.	Ensures the application of different teaching methods to support student development.
Use of teaching aids	Ensures the integrated use of innovative learning tools to support in-depth learning.	Ensures the use of modern innovative teaching aids to support the individual development of each student.	Acquires teaching aids opportunistically.
Use of learning environments	Ensures the use of inspiring learning environments in a meaningful way.	Ensures the use of learning environments that inspire learning interest.	Ensures the use of everyday learning environments, mainly to support student development.
Recognition of talents	Supports students to apply their talents outside the school and guides them in this when necessary.	Recognizes students' different talents and encourages them to develop their abilities to the maximum.	Does not notice students' different talents.

Note. From "Estonian School Leaders' Competence Model", by Innove, 2016. Copyright 2016. Reprinted with permission.

Box 8.5 Promoting Principals' Pedagogical Leadership

In British Columbia, other than the requirement to be certified as a teacher, there is no formal requirement for appointment as a principal, although districts commonly require a master's degree, preferably in educational leadership or with coursework in leadership. Preservice programs for school leaders are offered by universities, professional associations, and some districts, and summer induction programs are offered to new school leaders. The Principals and Vice Principals Association has developed leadership standards that describe school leaders' 'integral role in modeling, creating, and sustaining a community that supports all learners' and that include standards for 'leading a culture of learning' and for 'curriculum, instruction, and assessment' (BCPVPA Leadership Standards Review Committee, 2019, p. 7). The ministry has developed a Provincial Leadership Development Framework that makes very limited reference to instructional leadership.

In Estonia, principals have teaching qualifications (usually a master's degree), but historically have not undergone specific training for leadership. As in Finland, principals have high levels of autonomy and responsibility for the running of schools, which includes responsibility for overseeing the adaptation and implementation of the school curriculum, overseeing teaching and learning, and planning teachers' professional development. The 2020 Lifelong Learning Strategy emphasized the importance of leaders leading pedagogy and creating a stronger teaching and learning culture in schools. This is also a priority of Estonia's School Leader Competence Model, which identifies five major competencies: leading the team, performance-based management, supporting the development of each student, innovation leader, and promoting school success.

In Finland, principals are required to have teaching qualifications at the level of the school they will lead and, since 1998, a certificate of formal studies in educational administration, which is usually completed part time at a university. Although qualifications in leadership have assisted in raising the professional status of school leadership, support for the ongoing development of principals has been limited, short term, and uneven. Some principals teach at least a few hours a week and so are seen not so much as managers, but as senior colleagues with additional responsibilities and significant pedagogical knowledge. Principals have increasingly been expected to provide pedagogical leadership within their schools, including by creating school-wide learning communities, supporting the work of colleagues, and addressing teachers' professional learning needs. They have also been encouraged to build leadership teams and to distribute responsibility for leadership.

In Hong Kong, the shift to school-based management in 1999 gave principals greater authority and responsibility. Aspiring principals are required to complete a Certification for Principalship, which includes a professional development portfolio. In the first 2 years of the principalship, they undergo a special program of professional development, and thereafter engage in a program of structured learning, action learning, and service to education and the community for about 150 hours in each 3-year cycle. Professional Standards for Principals have been

Box 8.5 Promoting Principals' Pedagogical Leadership (continued)

developed to guide principals' work and include the expectation that principals will be 'ethical enablers of all-round growth and balanced advancement; versatile architects of vibrant learning organisations; and visionary entrepreneurs of educational transformation and continuous school improvement' (Committee on Professional Development of Teachers and Principals, 2015c, p. 2). Hong Kong has also developed a Continuing Professional Development Framework for principals.

In Korea, principals accumulate, on average, about 30 years of teaching experience before becoming principals. School leadership positions are prestigious and competitive. Candidates are selected on points earned through experience, performance, and training and, once successful, undergo training that leads to a principal qualification. Although local self-governance was introduced in the 1990s, the national curriculum is centrally specified and there have been limited opportunities for principals to shape teaching, learning, and assessment. This is now being identified as a priority. There are limited requirements for principals to engage in professional learning, however the National Teacher Evaluation for Professional Development System includes guidelines for school leaders' professional development.

In Summary

There has been a general expectation that school principals will take greater responsibility for pedagogical leadership, primarily by building school-wide learning cultures and supporting the work and professional development of teachers. However, expectations and support for this vary across these five jurisdictions. Standards and frameworks for school leadership sometimes make explicit the expectation that principals will lead teaching and learning within their schools and provide guidance on how this can be done. Principals' continuing professional development, including in pedagogical leadership, has also been given greater priority.

Promoting system leadership

In addition to expecting principals and other senior staff to drive improvements in local school practices, to build school-wide cultures of learning, and to promote improved teaching and student learning, these jurisdictions are increasingly encouraging school leaders to play leadership roles beyond their schools. This is usually referred to as 'system' leadership. In promoting system leadership, jurisdictions encourage leaders to contribute to improvements across a school district or an entire school system. The goals are to build overall capacity in the system by having schools and leaders learn from each other—particularly by having less effective schools and leaders learn from more effective ones; to spread ideas, innovations, and good practices; and to promote collaborations to address difficult common challenges.

In some of these jurisdictions there has been no significant history of collaboration between principals or across schools. Sometimes, schools have competed rather than collaborated, making system leadership and the concept of working for the success of other schools a new challenge for many leaders. In some jurisdictions, the decision to delegate school oversight and/or ownership to local municipalities and to give schools greater autonomy and control over their own affairs—consistent with the subsidiarity principle—has increased the independence of schools, the authority of individual school leaders, and the variability in schools’ practices. These factors, evident to some degree in Estonia and Finland, can make it more likely that principals’ energies are focused on managing and leading their own schools. In these jurisdictions, informal sharing and collaboration occur, but are generally not planned or formalized. As a result, learning across schools and municipalities can be limited. Despite this, there is often considerable collaboration of schools, universities, Ministries, non-government organizations, and businesses in support of improved learning. And in Finland, some municipalities have allocated a proportion of principals’ time to district-wide responsibilities, increasing their involvement in system leadership.

On the other hand, highly centralized decision-making can also reduce opportunities for principals to contribute to jurisdiction-wide collaboration and improvement. Korea has traditionally had strongly centralized processes, including a standardized national curriculum, and relatively low levels of local autonomy to make decisions and innovate. In recent years, government policies have been introduced to give more authority to local education offices and schools. The 2017 Plan for Promoting Educational Autonomy and School Autonomy included the intention that the Ministry of Education, offices of education, and individual schools would become equal partners in creating a new culture of school innovation and opened the way for principals to take on increased system leadership responsibilities.

In Hong Kong (as in Estonia), competition is a feature of the culture. Schools commonly use academic results as part of their marketing and branding in a competitive market for students. Despite the move to school-based management in the early 2000s, processes for decision-making and policy formulation are relatively centralized and include the use of expert advisory bodies, studies of international best practices, and systematic territory-wide preparations for the implementation of change. There is also a high level of collaboration across Hong Kong in support of quality education, including through partnerships of schools, professional associations, businesses, parent groups, and non-government organizations, and the Education Bureau makes significant use of multi-stage community consultations. In this environment of competition and collaboration, system leadership is shared across different levels of the system by a range of leaders and stakeholders.

Informal networking and the sharing of ideas is also a feature of the school education environment in British Columbia. Consultants and education leaders have promoted change and innovation, and there has been a willingness on the part of the ministry to make change, sometimes resulting in revolving policy decisions. In recent decades, greater responsibility for leading the work of schools has been devolved to school districts, which vary widely in their leadership capacity and have generally not had a collective voice. The Principals and Vice Principals Association, through its professional development activities, including its annual conference (Connecting Leaders) and courses (for example, Leading Cultures of Learning), has made an important contribution to promoting system leadership across the province.



In Summary

These jurisdictions are increasingly encouraging school leaders to play leadership roles beyond their schools. The goals of ‘system leadership’ are to build overall capacity in the system by having schools and leaders learn from each other; to spread ideas, innovations, and good practices; and to promote collaborations to address difficult common challenges. Existing competition between schools and a focus on local school management can be impediments to principals playing broader system leadership roles. Highly centralized decision-making that limits opportunities for local decision-making and innovation can also make system leadership less likely.

Building World-Class Leadership

This chapter has reviewed how these jurisdictions are working to ensure that improvements in educational provision and student outcomes, as well as planning for the future, are effectively led throughout the system. In these jurisdictions, leadership of the education agenda is increasingly viewed as the responsibility of leaders at all levels—from senior officers in the ministry to departmental heads, curriculum leaders, and teachers in schools. Leadership is understood to include advocating for and promoting the moral purpose of schools to ensure that every student’s learning needs are met, and every student is well prepared for further learning, life beyond school, and work. It also includes promoting a cohesive, collaborative learning culture built on strong, purposeful relationships; applying physical and human resources in ways that maximize learning and outcomes for students; and ensuring that decision-making is informed by, and evaluated in terms of, quality evidence.

In the past, ministries in these jurisdictions undertook external reviews of schools as a check on the quality of their work. The purpose was largely to ensure that schools complied with government requirements. External reviews of this kind are still undertaken when issuing new school licences or re-licencing existing schools. However, there has been a general shift in these jurisdictions away from regular checks on quality and compliance in every school. Most external reviews, where they occur, are now for the purposes of ongoing school improvement. They are viewed as opportunities for conversations between reviewers and senior staff about the school’s strategic planning for improvement, evidence relating to the school’s performance, and aspects of the school’s work in need of further attention. They tend to be collegial and supportive in nature. In some jurisdictions, these reviews and conversations occur only when schools are identified as being ‘at risk’ or when schools request a review. In others, they are undertaken for all schools as part of a regular review cycle or in samples of schools to gather information on particular aspects of practice to inform policy making.

Whether or not they conduct external reviews, these jurisdictions have expected school leaders and other school staff to play a greater role in reflecting on their own practices, identifying areas in need of improvement, and developing improvement strategies. These are usually incorporated into schools’ strategic plans, which are often on 3-year cycles. The belief is that improvements in practice are more likely to be made if the need for change is identified locally, and if school leaders take responsibility for planning, implementing, and monitoring the impact of the changes they make. In this way, self-evaluation becomes a basis for continuous whole-school improvement.

Some jurisdictions provide relatively little support to schools’ self-review processes. They focus instead on ensuring that every school has quality data about its performance, and that the data schools consider are not limited to academic performances and test scores. Survey instruments may be provided to schools to collect data on matters such as community perceptions, the school environment, the adequacy of school

resources, and student and staff well-being. Having collected quality data, schools then decide on priorities and strategies for improvement.

The observations in this chapter suggest that world-class support for school self-evaluations would go beyond ensuring access to quality school data; it would also provide leaders with a frame of reference for systematically reflecting on and evaluating key aspects of the school's work. It would encourage an analysis of how well the school was performing in areas such as curriculum implementation, the school climate, the quality of teaching, teacher professional learning, how the school applied its resources, how it used data, school-community partnerships, and the school's strategic planning and improvement processes. In this way, school leaders would be able to evaluate current school practices, identify opportunities for improvement, and reflect on what excellence in an area of practice might look like.

The chapter also observed that these jurisdictions have given increasing priority to the development of school leadership as a profession. Historically, principals were classroom teachers who took on additional school-wide responsibilities, sometimes with limited preparation or support. With moves to school-based management and greater autonomy, principals in these jurisdictions have been given a wider span of responsibilities, sometimes including financial management, staffing decisions, the development of school facilities and infrastructure, and strategic planning. In addition, they have been expected to provide pedagogical leadership within their schools, to build external relationships and promote the school to the community, and to play system leadership roles beyond their schools. The management and leadership of schools has increasingly been recognized as a profession in its own right, and these five jurisdictions have taken steps to build the professional capabilities of school leaders.

These steps include stronger preparation for the principalship through programs developed and delivered by ministries, universities, and professional associations. They also include the creation of frameworks or standards for principals that make explicit the nature of a principal's work and provide a basis for systematic self-evaluations against key aspects of the role. And they include enhanced opportunities for continuing professional development aligned with those standards.

The observations in this chapter suggest that world-class support for school leaders would include the explicit identification of key aspects of the leadership role as a basis for self-evaluation. School leaders would be supported to reflect on their effectiveness in leading improved teaching and learning and better outcomes for all students. This would include reflecting on their effectiveness in communicating and promoting the school's moral purpose, building a school-wide learning culture, creating strong and productive internal and external relationships, providing leadership to teaching and learning, and leading strategic change within the school.

Experience in these jurisdictions also suggests that world-class support for school leadership would include strong professional leadership associations offering opportunities for professional learning, thought leadership, fellowship, and collaboration around contemporary educational challenges and leadership practices.

Another important development in these jurisdictions has been the encouragement of school leaders to take on broader system leadership roles to promote improved practices and outcomes across entire school systems. At least some of these jurisdictions have introduced opportunities for leaders to interact around system improvement objectives, to share innovative practices with other schools, to collaborate on challenging problems of practice, and to learn from international research and experience. These, too, would be features of a world-class approach to the leadership of school education.

Questions for Reflection and / or Provocation

- ✓ In Hong Kong, principal training requires candidates to do an individualized needs analysis of their skills, complete an action learning project and create a portfolio of their professional development that is assessed. What kind of training is required for school leadership in your system? How does it reflect what your system considers the key capabilities for the job?
- ✓ In British Columbia, principals are expected to continue their professional development throughout their career and the provincial leadership framework specifies areas in which they are expected to focus. Is there such an expectation in your system? If so, what capacities are seen as those most critical for ongoing leadership?
- ✓ School leaders in these systems are expected to support teachers to improve their teaching. How do school leaders in your system support teacher learning and leadership?
- ✓ Estonia requires schools to publicly share a broad set of information that includes much more than test results. It includes school satisfaction survey results, approaches to teaching and learning, and use of digital tools. What kind of information are schools in your system asked to share with parents and the public?
- ✓ School leaders in these systems are increasingly being expected to play leadership roles across their districts and systems. Do school leaders in your system have opportunities to shape system policy as well as implement it?

9

A Supportive Learning Ecosystem



Chapter Key Themes

- There is a strong community belief and faith in the value of education. Education is seen as both a key to individual advancement and collective nation building. Education has helped to build national identity, preserve language and culture, promote democratic institutions and advance the economy.
- Schools are more closely integrated into, and draw on the wider resources of, the communities in which they work. These communities include parents, business, cultural and educational institutions, and community organizations.
- Out-of-school learning is a key feature of these systems. This includes activities that are both informal and formally aligned with school curricula.
- Systems are considering how to measure and accredit the learning that happens in informal environments. In some cases there are also efforts to limit the time spent on formal learning, like tutoring, outside of school.
- These jurisdictions try to align the contributions of the ecosystem to their core priorities for students.

A jurisdiction's ability to achieve its aspirations for students and their learning also depends on the support available from the broader ecosystem within which schools work. A learning ecosystem includes parents, professional associations, community organizations, universities, non-government organizations, businesses, ministries of education, regional and municipal education offices—in fact, any organization or stakeholder capable of contributing to the work of schools. Because the ecosystem within which schools operate can make a significant contribution to the creation of learning environments and the achievement of desired learning outcomes, it is an important component of the overall learning system.

Building Greater Community Faith in the Value of Education

A feature of the learning ecosystems in most of these jurisdictions has been exceptional community belief in the intrinsic value of education. In some jurisdictions, this faith in education has deep historical roots. Education has been seen both as a key to nation building and shaping the future and as a passport to individual fulfilment and the achievement of personal potential. A consequence has been unusual respect and support for the work of teachers and schools on the part of parents and the community generally.

Looking to education to shape the future

Societies in Estonia, Finland, and Korea have looked to education historically as a means of building national identity and preserving national language and culture after periods of occupation by other countries. Hong Kong similarly has looked to education to promote Chinese language and culture, particularly since the end of British colonization. In these jurisdictions, education has been seen as a crucial vehicle for creating a future different from the past.

Schools in Estonia operate in an ecosystem that deeply values education. Estonians have a long history of commitment to learning. Literacy levels have been historically high, in part influenced by the country's Lutheran traditions. Books in the Estonian language have been published since the 16th century; the number of books in homes is among the highest in the world; the ability to read was once a condition for marriage; and according to the 1897 census, almost 97% of Estonians were able to read. There has also been a strong cultural tradition, including the arts, dance, and music. During the 19th century, a non-formal education system was established, and schools became contexts for community-wide reading, drama, and music activities. Teachers established libraries, choirs, and orchestras, and became leading members of local communities. In this way, high levels of trust were established in teachers and schools, and this trust has continued. During the Soviet period (1944–1991), the maintenance of the Estonian language and traditions was a particular priority and, from 1991, schools contributed to the creation of a more independent, democratic nation. As a relatively small country with limited natural resources, Estonia in recent decades has focused its energies on developing an education system to support a knowledge-based economy and an advanced information technology sector. Education is viewed as a key to the nation's future, and there is an unusual level of involvement of the entire community in supporting the work of schools.

Finland, too, has looked to education for nation building, the creation of a more equal society, and the development of a high-tech, information-based economy. During the 19th century, education was an important tool in creating the Finnish-speaking nation. At that time, Swedish was the language of the elites, and the training of Finnish-speaking teachers was seen as essential to promoting national identity and maintaining Finnish language and culture, including during periods of significant Russian influence prior to Finland declaring its independence in 1917. As in Estonia, teachers became leaders of local cultural activities, such as organizing choirs, theatre performances, and parental education, and initiated and participated in political and civic organisations. Because of their contributions to maintaining national culture and autonomy, they were referred to as 'candles of the nation'. At the same time, schools were seen as a key to achieving a more equitable society through a more humanistic, child-centered approach to learning. A strong focus on equity and social justice led to the introduction of the

comprehensive school in the 1970s and was part of Finland’s general commitment to becoming a welfare state. Over recent decades, Finland has looked to its schools to respond to changes in the economy and society, including advances in digital technologies and artificial intelligence, to prepare students for new careers and ensure sustainable national growth.

The promotion of social justice and the creation of a more equal society have also been central objectives of the school system in British Columbia. There has been a particular focus on equity for the province’s significant immigrant population and for its Indigenous peoples, and a high priority has been given to developing more inclusive schooling arrangements and a strong social conscience. British Columbia looks to its schools not only to build a knowledge-based workforce and sustainable economy, but also to contribute to the building of a just, progressive, and innovative society.

Hong Kong has looked to its schools to keep pace with the territory’s evolution from a fishing village in the early 20th century to a major low-cost textiles and plastics manufacturer by the 1970s, to a global economic powerhouse and international trade, business, and financial services centre in the 21st century. In parallel with Hong Kong’s economic rise, the government greatly expanded access to education, which had historically been available to a relatively small elite. Between 1959 and 1966, 300,000 new primary school places were created. Compulsory free education to 15 years of age was introduced in 1978, and a significant increase in the percentage of students continuing to university was achieved by the early 1990s. However, by the late 1990s, there was broad dissatisfaction with how schools were preparing students. With the removal of most manufacturing to mainland China, nine years of schooling no longer prepared students for the emerging Hong Kong economy. Employers considered school graduates to be inadequately prepared for new workplaces by existing curricula and associated competitive examinations (OECD, 2010a). The result was comprehensive reform of school education, beginning in 1999 with public consultations on how Hong Kong society had changed and the implications for learning, the curriculum, and student assessment.

Since achieving its independence in 1945, Korea has looked to its education system to build and maintain its democratic institutions and to drive national economic growth. By the mid-1960s, widespread illiteracy had been eliminated, and by 2018, 98% of 25- to 34-year-olds had completed upper secondary education, and 70%, postsecondary education—the highest rates in the OECD. The government’s prioritization of human resource development, investments in education, and spending on research and development contributed to these high rates of participation and the development of a strong science and technology sector. Education is sometimes described as the main force behind the country’s growth (Korean Ministry of Education, 2019). However, recent declines in the rate of national growth, coupled with a declining birth rate and population of young people, have shifted the government’s focus to a more ‘people-centered’ economy with higher rates of inclusivity and innovation.



In Summary

These jurisdictions have witnessed unusually high levels of community faith in school education and its potential to shape the future. A number of jurisdictions have looked to teachers and schools for nation building and the preservation of national culture and language. Most have seen schools as essential to achieving social justice and the creation of a more equitable society. And all have viewed higher levels of participation and educational attainment as keys to national economic growth and development.

Looking to education for personal advancement

Families and students in these jurisdictions have looked to education as the primary means of individual advancement. This has been especially true in Estonia, Hong Kong, and Korea where belief in education's ability to open doors to personal success has led to high levels of family commitment and support; long hours of study and hard work; unusually high levels of student competition; and a deep conviction that effort will deliver success. In British Columbia and Finland, too, families and students have viewed education as a path to individual fulfilment, but social inclusion and collaboration have generally been viewed as higher priorities than extreme effort and competition.

In Estonia, there is a long tradition of students aiming high, working hard, and being competitive. This tradition has its origins in Protestant values and in parents' desires to see their children take advantage of opportunities that were not available to them. Estonians are sometimes referred to as people of educational faith, and this faith is accompanied by a serious attitude to learning and unusual respect for teachers. School is expected to be hard work, not fun, and students generally spend considerable time on extracurricular learning activities, often followed by several hours of homework. Students' beliefs that effort will lead to success (a growth mindset) are among the highest in the world. Outside school, there are high participation rates in arts and sports where students also work systematically to practice and improve. Competition is a distinguishing feature of Estonian society. Families compete to have students attend the best schools, with even preschool children competing for entry. There are also numerous national and international competitions in which students participate. National Olympiads organized by universities and subject associations are conducted in about 20 school subjects. However, there are concerns that widespread competition is impacting negatively on school climates and student attitudes, and nearly two thirds of Estonian students describe being chronically tired (Ruus et al., 2007).

A strong belief in education as the path to individual social and financial success is also a feature of Hong Kong society. Strongly influenced by Confucian traditions and values, families have high aspirations for their children, underpinned by a deep belief that hard work is the key to success, regardless of other individual differences. Competition is also part of the broader culture in Hong Kong. There has been a long history of preparation for competitive external examinations, and these continue to dominate student learning and effort in secondary schools. Individual effort, diligence, repeated practice, and rote memorization have been seen as essential for examination success, and families have been prepared to devote considerable time and money to ensure students' success, including through private tutoring. In this context, the government has given greater priority over the past 20 years to balanced 'whole person development', including by placing greater emphasis on students' physical, social, and emotional well-being.

Education in Korea is also heavily influenced by Confucian traditions and values, which place a high value on learning. Families historically have had high aspirations for their children's education. With the decline of the earlier class system and the rise of a more meritocratic society from the 19th century, education became increasingly valued. This continued with the opening up of the economy and the expansion of educational opportunities following independence in 1945. For most Koreans, admission to college through high performance on the College Scholastic Ability Test became a primary objective of schooling. High performance on this test provided access to elite universities, which in turn opened doors to employment in the nation's leading corporations. Traditional values of hard work and perseverance coupled with strong competition for prestigious university courses and careers has resulted in exceptional levels of student effort and competition. Families have invested heavily in private tutoring offered by Hagwons, with most students receiving external tutoring at some point in their schooling. The consequences for many students are high levels of stress, sleep deprivation, and low levels of physical activity (in 2015, the proportion of Korean 15-year-olds engaging in sports outside school hours was the lowest in the OECD). Reported life satisfaction levels of students were also among the lowest in the OECD.



In Summary

For individuals, education is a leading pathway to personal fulfilment and a better quality of life. However, in some jurisdictions, competition for success has resulted in exceptionally long hours of study and hard work for students, which has had a negative impact on their day-to-day lives. In these jurisdictions, tests and examinations decide winners and losers, and families and students invest significant time and money in out-of-hours learning. Governments are aware of these stresses and are working to achieve improved work–life balance and increased levels of student well-being.

Increasing the Quality of Out-of-School Learning

These jurisdictions are working to provide students with a broader range of learning opportunities than can be provided within classrooms and by schools alone. They recognize that learning in the 21st century needs to draw on the resources of the wider ecosystem within which schools operate, including local community organizations, non-formal learning institutions, businesses, families, and higher education institutions. Hong Kong refers to this as ‘life-wide’ learning. The aim is to situate learning in a broader range of real-world contexts to better meet individuals’ diverse learning needs. The involvement of other contributors to student learning is also adding new ways of recognizing and documenting learning. However, within these jurisdictions, there is recognition of the need for quality assurance processes in relation to out-of-school learning, including checks on its impact. For example, in Korea, steps have been taken to contain the role that tutoring bodies (Hagwons) have in out-of-school learning.

Broadening opportunities for learning

In Estonia, the Youth Organization Act (1936) introduced an understanding that education is the responsibility of many different organizations in society and established the foundations for that country’s extensive extracurricular learning activities. The national curriculum promotes out-of-school learning, and students take advantage of a wide range of opportunities provided by institutions that include ‘hobby’ schools, nature centres, museums, and environmental education centers. A significant network of non-government organizations, technology companies, and others in the private sector actively support the work of schools. Many provide learning programs aligned with the national curriculum. For example, museums and historical centers develop programs in collaboration with schools and these are included in initial teacher education programs.

Under the Hobby Schools Act (2006), hobby schools are established to promote student learning in five areas: sports, technology, nature, general culture, and music/arts. These schools also play a role in promoting Estonian identity, culture, and language. Programs are provided through a wide range of institutions, including a major science centre in Tartu (the largest in the Baltic states), the Energy Discovery Centre, and other thematic centers such as the Ice Age Center. In the 2019–2020 academic year, 90% of students in comprehensive schools participated in some form of extracurricular learning provided through 782 hobby schools offering 4,562 separate learning programs. Parents can search for these in a national database. Hobby schools in Estonia are viewed as a way of responding to individual strengths and learning needs, and of recognizing individual success.

National and local governments provide financial support to enable students to participate in extracurricular learning in these centers, which are mainly within the jurisdiction of the Ministry of Culture. The Ministry of Environment also provides support, and the Estonian Research Council supports

extracurricular activities such as the National Contest of Young Scientists, the Young Scientists' Festival, and the National Contest of Young Inventors.

Estonian students approach extracurricular learning seriously. Considerable time is spent on hobby learning outside school hours and in addition to homework. Hobby schools in music and sports set high expectations of students. In addition, universities work closely with schools and offer programs for more advanced students from age 12. For example, the Youth Academy at the University of Tartu provides in-depth learning of subjects to prepare for student contests, opportunities for independent work, study materials, and science camps. (Schools are also offered programs, teacher in-service training, and laboratory materials for use in regular school lessons.)

Although Finland's national core curriculum does not require schools to provide out-of-school learning opportunities, it notes the availability of libraries, sports and nature centers, and art and cultural institutions, and their possible role in student learning. In addition, there are fee-based arts and crafts programs offered to students outside school hours by institutions that receive funding from national or municipal governments. These national 'basic education in the arts' programs include architecture, circus, dance, handicraft, media art, music, theatre, verbal art, and visual arts for both primary and secondary students. All programs have a curriculum with clear steps of advancement and certificates of student attainment, sometimes based on examinations.

In Hong Kong, the intentions of the curriculum are expected to be pursued through learning experiences in classrooms, and also in real-life settings outside schools. This is described as life-wide learning. Experiential learning in authentic out-of-school contexts is viewed as necessary for the acquisition of knowledge, skills, and attributes not readily developed in classrooms alone, and to whole-person development in the five prioritized areas of learning: intellectual development, moral and civic education, physical and aesthetic development, career-related experiences, and community services. Out-of-school learning is also seen as important to the development of lifelong learning attitudes and skills.

The Education Bureau encourages schools to consider a wide range of opportunities for student learning, including field work, interest classes, non-local exchanges, and community services. It provides examples of settings and organizations capable of contributing to student learning, including families, social service organizations and uniform groups, the Internet, industrial and commercial organizations, religious organizations, the natural environment, non-local contexts, government, the mass media, and student peers. At the senior secondary level, where historically there has been a strong focus on preparation for examinations, the Education Bureau encourages schools to provide 'other learning experiences'. These include structured lessons in physical development, aesthetic development, and moral and civic education, but also learning after school or on Saturdays, cocurricular activities outside the classroom, and cross-curricular learning days.

In Hong Kong, community organizations are often eager to provide learning opportunities of these kinds. Non-government organizations prepare a variety of learning and teaching resources in their areas of interest and consistent with their missions. These resources sometimes address emerging issues such as cyber bullying, and social and emotional issues. These have been consolidated and made available on the HKEdCity webpage for public access. From 2004, a Life-wide Learning Grant was provided by the Hong Kong Jockey Club to enable students from less advantaged backgrounds to participate in out-of-school experiences such as excursions, field trips, visits, and mainland and overseas student exchanges, and from 2018, the Education Bureau funded this grant and scaled it up.



In Summary

Some of these jurisdictions have made unusual efforts to support and promote learning outside schools. Significant programs of learning, sometimes aligned with the school curriculum, have been developed by institutions such as museums, science centers, and nature/environment centers, occasionally in collaboration with schools. Out-of-school learning is viewed as essential to developing knowledge, skills, and attributes not readily developed in classrooms and to developing well-rounded learners.

Minimizing negative aspects of private tutoring

Although out-of-school learning has significant potential to complement in-school learning, it also adds to the amount of time students spend in organized learning and to students' workloads. In some of these jurisdictions, especially Estonia and Korea, this has been recognized as an issue.

In Korea, private tutoring is widespread and is usually offered through after-school tutoring centers named 'hagwons'. In 2018, more than 70% of primary and secondary students were enrolled in private tutoring. Hagwons provide coaching and preparation for examinations, but they also provide in-depth learning of national curriculum subjects, study support, and a range of extracurricular learning activities.

It is not uncommon for Korean students to spend considerable time engaged in private tuition, possibly up to 4 hours every weeknight, followed by further study at home. Although this reflects dedication and effort on the part of students, and significant financial commitment on the part of parents, the impact of this amount of out-of-school learning on student well-being has been of concern to the government. There are also concerns about inequitable access to additional teaching of this kind. As a result, some regions have imposed limits and curfews on hagwon operating hours. Extra support has also been provided to enable schools themselves to provide tutoring and extracurricular activities, and the amount of material available free of charge to students through the Educational Broadcasting System television network and Internet portal has been increased. The exam-free semester in Korea was also introduced to reduce the pressure on students to prepare for examinations, including by resorting to out-of-school tutoring.

More generally, the government has worked to reduce families' spending on private tuition. In the decade to 2015, there was a 40% decline in spending from private sources as a share of gross domestic product (GDP). And, in an attempt to reduce the influence of private tutoring, the Korean Government passed a Special Act in 2014 requiring schools to teach and assess only what was specified in the national curriculum.



In Summary

Although out-of-school learning has significant potential to complement in-school learning, it also adds to the amount of time students spend in organized learning and to student workloads. In some jurisdictions there is concern about inequities of access to out-of-school teaching, as well as concern that private tutoring is impacting negatively on students' health and well-being.

Strengthening Alignment of the Ecosystem

A range of bodies have the potential to support the work of schools. In the case of public schools, these include other parts of the school system—usually a central ministry and regional and/or local education offices. Other national education bodies, universities, professional associations, teacher unions, and non-government organizations are also capable of contributing significantly to the mission of schools. However, an effective educational ecosystem depends on strong alignment around common aspirations, goals, and priorities.

Building alignment within the school system

An important part of the ecosystem within which schools operate is the wider school system, usually including a central ministry of education; middle-level authorities such as regional/district education offices or school sponsoring bodies (SSBs); and school-based management committees or governing boards. These can all be thought of as part of the overall learning system. They are designed to oversee and support the work of schools and ultimately to improve the quality of educational delivery, student learning, and well-being.

The effectiveness of a school system depends in part on its internal alignment. There must be vertical alignment of objectives, values, and priorities across the various levels of the system—a shared commitment to a common agenda, from the jurisdiction’s government to its classrooms. And there also needs to be horizontal alignment in the sense of common standards and consistent quality across the jurisdiction—both at the middle level of districts/regions, and at the level of individual schools. These five jurisdictions have been working in different ways, and with varying degrees of success, to ensure both vertical and horizontal alignment of their school systems.

Although the five school systems are structured differently, they are broadly similar in that they are overseen by a government ministry, have middle-level authorities in the form of regional/district offices or, in the case of Hong Kong, school owners, and have local, school-based management committees or boards (see Box 9.1). The role of the ministry (Education Bureau in Hong Kong) includes implementing government legislation, developing education policies, providing a framework for the curriculum, allocating resources, and monitoring performance. The role of middle-level authorities varies, but includes responsibility for the operation of schools, which may include responsibility for opening and closing schools, allocating funding, appointing staff, and developing curricula. The role of local school governing bodies also varies, but normally includes oversight of the school budget, local staffing decisions, and school planning and performance monitoring.

Over time, all five jurisdictions have devolved greater responsibility for decision-making from the ministry to middle-level authorities and schools. Historically, responsibility for schools may have been centralized. For example, following the Korean War, the Korean Government transferred control of schools from local school boards to the ministry, where it has largely remained. However, in general, the recent trend in these jurisdictions has been to decentralize decision-making. The rationale has been the principle of subsidiarity—the intention that central authorities should perform only those functions that cannot be performed at a more local level. In some jurisdictions, the concept of the centre ‘delegating’ some of its responsibilities has been replaced by the idea that different levels in a system have different but equal responsibilities.

However, where responsibilities are located varies considerably across these jurisdictions. For example, the development of the curriculum is undertaken centrally in Korea, but schools in Finland have considerable flexibility to adapt the curriculum within a centrally provided framework. End-of-school assessments are based on centrally developed examinations in Hong Kong, but course-specific examinations are the responsibility of classroom teachers in British Columbia.

All jurisdictions recognize that a balance must be struck between autonomy and alignment. These jurisdictions have adopted different approaches to achieving this balance and have been more and less successful in the attempt.

Vertical alignment within a school system depends on clarity about the system's goals, aspirations, and priorities for student learning, well-being, and development. These are communicated primarily through the school curriculum, but also through shared statements of values and agreements on the kinds of learning environments schools will establish and maintain.

The ministry has a central role in implementing government policy and ensuring alignment around the jurisdiction's priorities. This depends on a ministry capable of setting and leading the education agenda. In some of these jurisdictions there is concern that decisions to assign greater responsibility to districts and schools have been accompanied by a reduction in the capacity of the ministry. The practice of seconding educators from schools to work in the ministry has declined, reducing the capacity for educational leadership from the center. Adding to this, senior executives sometimes lack backgrounds in education and are appointed instead for their general management expertise. In addition, regular changes in governments and their political persuasions, as well as changes in senior executives, sometimes result in differing views on the role of the ministry—for example, in relation to the central development of the curriculum or the provision of centrally developed tests and examinations. The consistency of the education agenda over time has varied across these jurisdictions.

Strong vertical alignment also depends on clarity about where responsibility resides. This question is sometimes brought into focus when a higher level in the system believes it needs to intervene in the interests of the whole system. For example, with evidence of recently declining standards in some of these jurisdictions, at least one ministry is questioning whether it should intervene and 'take back' control of aspects of the curriculum and standards—a scenario anticipated by the OECD in 2010 (OECD, 2010a).

In Korea, a question about where responsibility resides was ultimately settled in the Korean Supreme Court. In 2014, the superintendent of the Seoul Metropolitan Office of Education advised six high schools that, based on their performance, their status as 'autonomous private high schools' was being rescinded. The Minister of Education overruled this decision, resulting in the superintendent taking the matter to the court, which found in favour of the minister. The superintendent's decision to take back the autonomy these schools had been given was overruled by the minister's decision to take back the authority the superintendent believed he had.

In Estonia, responsibility for establishing and closing most schools resides with local municipalities, not with the ministry. This responsibility is enshrined in the Estonian constitution. In the past, a consequence was that some local communities chose to maintain very small schools, sometimes with as few as 30 students. In these schools, teachers often had part-time positions and there were concerns about the quality of education being provided. This led the ministry to attempt to reform the network of schools, including by encouraging the closure of some small, rural schools in favor of larger schools in villages and towns. This was an emotional topic. There was a particular issue in relation to upper secondary schools, with small schools not being able to offer the range of courses, learning environments, and other resources such as social workers and psychologists. This issue was resolved when the ministry offered to take over the ownership of upper secondary schools in return for building larger, better equipped, and better staffed schools. The country now has a system of well-resourced, state-owned upper secondary schools.

Horizontal alignment depends on consistency of practices, standards, and quality across districts, municipalities, and schools. Most of these jurisdictions have achieved relatively high levels of horizontal alignment, but this has been achieved in different ways in different jurisdictions—for example, through consistent quality of schools and teachers, funding allocation formulas, common curricula, textbooks,

centrally provided tools and frameworks, and jurisdiction-wide professional learning communities. Nevertheless, in some jurisdictions, there are questions about whether horizontal consistency has recently been eroded.

Korea has achieved alignment through a centralized governance structure and a detailed national curriculum that regional education offices are expected to adapt and implement. The entire system was methodically planned, built, and implemented by the government. Although increasing authority has been delegated to regions, and there has been an intention to provide greater autonomy to schools, including through 2008 and 2017 plans for the promotion of school autonomy, progress has been cautious, and schools have not always felt that they have more decision-making authority. A 2019 National Education Commission proposed the transfer of more authority. However, in general, regions and schools have relatively low levels of autonomy and there is a keen awareness of the need to balance autonomy with consistency of expectations and standards.

In Hong Kong, alignment is achieved through strong leadership by the Education Bureau. Although schools in Hong Kong belong to a variety of school sponsoring bodies, with the potential for significant variability in approaches and practices, the Education Bureau provides an unusual level of guidance and support to schools. This includes the Hong Kong curriculum, numerous tools and frameworks, and organized professional learning activities. Examples include optional on-site support services available to all schools. The Education Bureau recruits experienced teachers as school support officers to work with principals and teachers as consultants and co-developers. These officers provide support to the development of school-based curricula, collaborative lesson planning, the sharing of resources and good practices, problem-solving, and in-school action research and evaluation. The Education Bureau also promotes inter-school professional learning communities around particular stages of school and particular themes. For example, with primary schools required to have a designated curriculum leader, a professional learning community of curriculum leaders has been established to enhance curriculum practices across Hong Kong's schools. The Education Bureau also plays a strong hand in how students are allocated to schools across the territory.

British Columbia's Ministry of Education historically has had a central role in the development and implementation of the provincial curriculum, the selection of learning resources, the development of classroom assessment strategies, and the conduct of provincial assessments and examinations. Teachers and school leaders have been engaged by the ministry to assist in these processes. However, over the past 20 years, the involvement of experienced teachers and leaders in these processes has declined and, increasingly, educational leadership has been devolved to the 60 school districts where capacity is mixed. Although the superintendents are influential within their districts, they tend not to have a collective voice on policy matters and there is a view that there are too many school boards, that horizontal alignment has been lost, and that there is unacceptable variability in quality across districts and schools. A key lever the ministry has used to ensure equity across the province has been school funding. Prior to 1993, school boards were able to raise local taxes, but by that time the ministry had centralized the collection of school taxes. This provided more equitable funding across districts, but also changed the role of school boards and introduced some uncertainty about their roles and responsibilities.

At the time Estonia regained independence in 1991, its school system was designed to provide a high level of autonomy to individual schools. The ministry develops broad frameworks within which schools operate. The intention is that, at least for the first 6 years of school, every student should receive a high-quality education in a school close to their home from highly qualified teachers. School funding policies are designed to provide equitable learning opportunities for all students, with the government funding municipalities based on the number of students, plus additional funding for rural communities. In this way, an attempt is made to minimize the influence of local variations in income levels. The same funding formula applies to private schools. The 79 municipalities and the schools they oversee have an unusual degree of independence, which sometimes results in differences in approach and culture. There is also

noticeable variability in the quality of school management. However, despite this variability and the absence of strong central direction or guidance, a consistently high-quality education is provided in Estonia's schools by an experienced and knowledgeable teacher workforce.

In Finland, the ministry creates a central roadmap within which most decisions relating to basic education (up to Grade 9) are then made by the country's 311 municipalities and the schools they oversee. These decisions include the allocation of funding to schools, the recruitment and professional development of teachers and principals, and the design and implementation of local curricula within the framework of the national core curriculum developed by the ministry. Municipal authorities, having appointed the principal, tend to leave the running of schools largely to principals and teachers, meaning that most schools operate with high levels of independence. Despite this, municipal authorities may monitor and guide schools, including by arranging assessments to monitor learning outcomes and ensure quality across the municipality. There are very few private schools, and these are funded in the same way as municipal schools. The ministry provides relatively little direction or guidance, and there are few formal structures for information sharing among teachers and policy makers. Textbooks play an important role in the implementation of the national curriculum and in ensuring consistency across schools. As in Estonia, consistent high-quality education across schools is also provided by unusually well-prepared and expert teachers.



In Summary

In all five school systems, middle-level authorities and individual schools have been given greater responsibility for educational decision-making. At the same time, systems have recognized the importance of jurisdiction-wide alignment around goals and priorities, as well as consistency of standards and quality. Alignment and consistency are delivered in various ways, including through common curricula, textbooks, funding allocation formulas, centrally provided tools and frameworks, consistently high-quality schools and teachers, and jurisdiction-wide professional learning communities.

Working with other stakeholders

Organizations and interest groups external to the school system also form an important part of the ecosystem within which schools operate. Across these five jurisdictions, numerous bodies and stakeholders contribute to the work of schools and school systems.

In Estonia, the nation's research universities are influential components of the school ecosystem. Although the education ministry coordinates the development of the national curriculum, in 1996, the first version of the curriculum was prepared by a team at Tallinn University. The 2011 version was led by the Ministry of Education and the National Examination and Qualification Center, with the center for curriculum development at the University of Tartu taking responsibility for cross-curricular syllabi and inter-subject integration materials. These close collaborations between the ministry and the universities are explained in part by the fact that Estonian universities are evaluated on their contributions to society. But the relatively small size of the country also encourages close collaboration. It would be unlikely, for example, for the Estonian Ministry of Education to develop educational policies without involving academics from the nation's universities.

Box 9.1 Structures of the School Systems in These Jurisdictions

British Columbia's public schools are organized into 60 school districts. The provincial ministry has responsibility for education policies, setting standards, allocating funding to school districts, developing the curriculum and learning resources, overseeing the certification of teachers, and providing school support services. Responsibility for the operation of schools is assigned to the 60 boards of education and their superintendents. This includes the hiring of teachers, principals, and the superintendent, and the setting of the annual budget. In the past, school taxes were collected locally, but school funding was eventually centralized. More responsibility has been devolved to districts over the past 20 years. There is also a significant number of independent and First Nations schools.

In Estonia, responsibility for schools was devolved to local municipal authorities following independence in the early 1990s. Prior to 2017, there were 213 local authorities; these have since been reduced to 79. The national ministry provides frameworks, conducts checks on schools, and provides funding for teacher salaries and other school costs, including student meals and learning materials. Municipal authorities establish, rearrange, and close schools, monitor student numbers, hire principals, and organize matters such as student transport, school maintenance, and meals. Individual schools have a high degree of independence. An advisory school board works with the principal to hire teachers, set salaries, develop the school curriculum, establish the school budget, and undertake school planning.

In Finland, authority for organising school education to the end of ninth grade was devolved to local municipalities (currently 311) with the introduction of comprehensive schools in the 1970s. The Ministry of Education and Culture, through its operational arm, the Finnish National Agency for Education, develops the national core curriculum and accredits teacher training programs. Local municipalities allocate funding to schools, recruit and develop teachers and other school staff, appoint principals, and design and implement local curricula. They may decide to allocate some of these functions to individual schools. Schools operate largely independently. About a third of schools are small, with fewer than 100 students. The ministry issues licences to local authorities, registered associations, and foundations to operate upper secondary schools. There are very few private schools.

Schools in Hong Kong are run by school sponsoring bodies (often religious and charitable organisations). Approximately, 80% are fully funded by government; 10% can also charge fees; and less than 10% are wholly owned by the government. The education system is overseen by the Education Bureau, which enforces legislation, develops a framework of policies and guidelines, allocates funding, develops targets, and monitors standards. School sponsoring bodies set the vision and mission for their schools and, for each school, appoint an Incorporated Management Committee to oversee the school. Under the territory's School-Based Management Policy, introduced in the early 2000s, schools have considerable autonomy in relation to the deployment of funding and personnel, school policies, curriculum design and

Box 9.1 Structures of the School Systems in These Jurisdictions *(continued)*

delivery, and school improvement planning.

In Korea, the Ministry of Education sets national education policy, including the national curriculum, provides administrative and financial support to the entire school system, publishes textbooks, and sets goals and priorities for school education. Since 2008, greater autonomy has been given to 17 regional education offices, which oversee school education in major provincial and metropolitan areas. These offices and their elected superintendents are responsible for establishing and closing schools, school budgets, the appointment of school staff, and school inspections. Within this structure, 176 local education offices oversee the operation of schools and implement regional and national policies. Although each school has a school board and is intended to be self-governing, in practice, school autonomy is very limited.

Researchers at Estonian universities also work closely with the ministry on curriculum innovations such as the development and assessment of general competencies. Collaborations have included work to develop assessments of ‘learning to learn’, self-determination, communication, and digital competence. Other work is being undertaken to assess entrepreneurship and self-regulation. Assessment resources resulting from these collaborations are made available to schools on the ministry’s website through its agency the Education and Youth Authority.

And Estonian universities are the main providers of in-service professional learning for teachers. Centers have been established at both Tallinn and Tartu Universities to offer in-service courses and school development programs, including courses on the classroom use of new assessment resources. At Tallinn University, the Teacher Innovation Lab program and a whole-school development program known as Future School provide practicing teachers with opportunities to develop and pilot new teaching practices, to apply these in their classrooms, and then to evaluate and discuss these within a Teacher Innovation Lab learning community.

More generally, academics in Estonia provide the school system with up-to-date information about new developments and international research findings relevant to the work of schools and support the system to evaluate the impact of new initiatives and policy changes. This unusually close relationship appears to work to the benefit of both universities and schools.

In Finland, university academics are invited to join working groups of the ministry and there are active teacher and parent unions. The Finnish Institute for Health and Welfare has played a greater role in schooling through its Student Health Promotion Study. And there is considerable public discussion in the media of declining academic standards and student well-being.

Hong Kong schools are part of an exceptionally strong ecosystem that includes philanthropic organizations, universities, employers, community-based organisations, and other non-government organizations. These external stakeholders have made major contributions to building and reforming Hong Kong’s school system over the past 2 decades. For example, philanthropic organizations have contributed by filling gaps in policies and services, funding research, foreseeing emerging school needs, and serving as think tanks. The close involvement of external stakeholders in the work of Hong Kong

schools is due in part to the government's strategy of consulting widely to engage the whole community in conversations about the need for reform and in the design and implementation of reform strategies.

A distinctive feature of consultation and reform processes in Hong Kong has been the government's use of expert task forces to consult with the public and provide recommendations for change. The major reforms in the period from 1999 to 2003 were based on a sequence of public consultations conducted by the Education Commission. Broad community consultation by expert task forces has also been undertaken in other areas of policy reform such as the introduction of the new academic structure for schools that transformed upper secondary education from elite to mass provision. More recently, in 2017, the government established expert advisory bodies to consult and make recommendations in eight key areas, including school management, home-school cooperation and parent education, curriculum and assessment, vocational and professional education, the professional development of teachers, and the funding of research. These advisory bodies were chaired by recognized community leaders and had memberships representative of a broad range of interests. The government ensured adequate time for community consultation and the collection and consideration of evidence. Recommendations were then made to the government for possible endorsement and implementation by the Education Bureau.

In British Columbia, the school ecosystem includes several educational leaders, thinkers, and innovators who have successfully pushed for change in the province's schools. This group is made up of education consultants, academics, professional associations, the teachers' union, and current and retired ministry officials and superintendents. Because of the size of the system, these influencers know and understand each other, generally respect each other's work, often attend the same meetings, and are part of an informal network. They have contributed to making school education in British Columbia innovative and progressive.

Particularly influential in this ecosystem has been the British Columbia Teachers Federation (BCTF), the union representing government schoolteachers. The BCTF and its strong social justice agenda have had a major impact on education policies and the evolution of schooling in the province over recent decades. The BCTF has taken a strong stance on the school curriculum, the measurement of educational outcomes, the involvement of the private sector in public education, increased parental involvement, and the introduction of accountability measures. This has resulted in tensions between the union and government, first referred to in the 1980s as the 'school wars'.

The BCTF's opposition to standardized testing has been directed at the province's Foundation Skills Assessment (FSA) program and also influenced the government's decision to abolish end-of-school external examinations. The union has generally opposed the measurement of outcomes, arguing that they encourage competition and take inadequate account of inputs such as socioeconomic background that influence outcomes. It also opposed district accountability contracts based on measurable targets for the improvement of literacy and numeracy levels and student graduation rates.

Recently, the BCTF has worked productively with the ministry on the development and implementation of the curriculum, which is widely seen as progressive and constructivist.

The union's general view is that public education should be focused on reducing social differences and promoting social cohesion. Disagreements with the ministry over recent decades tend to have been in relation to teacher salaries, class sizes, classroom support for children with special needs, provincial testing, and accountability policies.



In Summary

In these jurisdictions, organizations and interest groups outside the school system are an important part of the education ecosystem and often make significant contributions to the work of schools. External stakeholders include universities, advisory bodies, think tanks, community organizations, employers, philanthropic organizations, and other non-government organizations. Close partnerships have often been the result of deliberate efforts to engage the broader community. Some highly influential bodies, such as teacher unions, have contributed to and shaped education policies and processes.

Building a World-Class Ecosystem

This chapter has considered features of the contexts in which schools operate in these five jurisdictions. A general observation is that schools in these jurisdictions increasingly do not work in isolation from one another or from their broader communities. There has been growing recognition that, if schools are to achieve their current objectives, they must be more closely integrated into, and draw on the wider resources of, the communities in which they work. These communities include parents, professional associations, businesses, non-government organizations, higher education institutions, community organizations, education ministries, and regional and municipal offices of education. The examples in this chapter illustrate how this broader ‘ecosystem’ can support and promote the work of schools, making it an important component of a jurisdiction’s overall learning system.

Experience in these jurisdictions highlights the value of strong community faith in schools and their contributions to society. In some of these jurisdictions, schools are recognized as having played a central role in nation building following occupation and war. Teachers have sometimes played a long-term role in the preservation of national culture and language and in leading cultural and civic activities in local communities. This has led to high levels of respect for the work of teachers. Schools have also been seen as leading agencies for achieving social equity and justice, particularly for disadvantaged and marginalized populations, and for Indigenous peoples. And all five jurisdictions have looked to their schools to contribute to an educated citizenry capable of engaging meaningfully with the challenges of the 21st century, as well as to provide a highly skilled workforce necessary for enhanced productivity, international competitiveness, and future standards of living.

In most of these jurisdictions, education is also seen as the main path to personal advancement and success. Schools offer opportunities that parents themselves may have been denied to pursue better careers and higher social standing. For these reasons, families are often prepared to devote significant discretionary spending to children’s education, including out-of-school learning, and to make substantial commitments of family time and effort. Strong faith in education’s potential to transform individual lives tends to be a feature of the ecosystems in these jurisdictions. However, as seen in this chapter, this can be a double-edged sword. In some jurisdictions, students spend extraordinary amounts of time on homework and other out-of-school learning. Tests and examinations that function as gateways to elite schools and university courses often dominate and narrow student effort, particularly in upper secondary schools. And the negative impact on students’ lives and well-being is often significant.

The observations in this chapter suggest that a challenge in any school system is to build community confidence in, and support for, teachers and schools. No school system can recreate the historical and social conditions that led to the high levels of support enjoyed in some of these jurisdictions. Nevertheless,

efforts to redesign schooling to prepare students for very different futures and to ensure schools open doors and provide pathways for all students (rather than favouring the already socially advantaged) are likely to be important in strengthening community support.

Another feature of the school ecosystem in some of these jurisdictions is an unusual level of support for out-of-school learning. This support involves more than incidental learning; it is often systematic and planned. The development of non-formal or life-wide learning is sometimes part of government policy to expand learning opportunities beyond classrooms and schools to enable forms of learning difficult to achieve in traditional school settings. These opportunities include career-related experiences, community services, sporting activities, programs in the arts and music, and student participation in national and international contests and Olympiads. Organizations that are not part of the education sector, including workplaces, museums, science centers, and environment centers, may offer learning programs aligned with the school curriculum. In these jurisdictions, students often spend considerable time outside school hours engaged in non-formal learning of these kinds.

Other out-of-school learning is provided by coaching colleges that provide additional teaching in school subjects, as well as preparing students for competitive tests and examinations. Such tutoring can add significantly to students' hours of study and workloads. A general conclusion from this chapter is that, in a world-class learning ecosystem, a variety of organisations are likely to contribute to student learning and well-being, but accompanying checks are required on the amount of time students spend on such activities.

The observations in this chapter suggest that an important feature of an ecosystem is its alignment around common objectives and priorities. In at least some of these jurisdictions, schools work collaboratively with other organizations and stakeholders, including universities, employers, teacher and parent associations, and non-government organizations to promote common intentions for student learning and well-being. Think tanks, philanthropic organizations, and expert task forces can also form part of an aligned ecosystem. Some jurisdictions go to considerable lengths to consult widely on aspects of their learning systems to establish agreement on desirable reforms and their implementation, and so build alignment across the school ecosystem.

Alignment of purpose and priorities is also important within a school system, both vertically from ministry to regions/districts to local education offices and schools, and horizontally across regions and schools. In these jurisdictions, various methods have been used to build alignment and consistency, including common curricula and textbooks, funding allocation formulas, centrally provided tools and frameworks, consistent quality of schools and teachers, and jurisdiction-wide professional learning communities.

Questions for Reflection and / or Provocation

- ✓ What is the role of the broader community in your school or system? Is there a sense of broad community support and involvement in the school and in providing opportunities for students?
- ✓ Estonia supports a broad range of afterschool learning activities for students and almost all students participate. How broad is engagement in activities and enrichment outside of school in your system? Why is this engagement important? Are there ways it could be strengthened?
- ✓ In Hong Kong, schools organize formal field trips, learning experiences and community service that involve a broad range of partners. What kind of learning outside of school is organized in your school or system? Are opportunities equitable?
- ✓ Some systems are trying to accredit learning that takes place outside of school towards high school certification or to capture it on a transcript. Is this something your school or system might consider? How might it change views of learning in your school or system

10

Redesigning for the Future



This study began by considering the aspirations these five jurisdictions have for school education. These aspirations are ambitious and are accompanied by a sense of urgency. The study then examined how the five jurisdictions have been pursuing these aspirations through the design of their learning systems. An effort was made to understand key features of each learning system, why it was developed as it was, and how it has evolved over time. This final chapter reflects on some ongoing challenges.

Despite their efforts over recent decades to improve the quality and equity of schooling, most of these jurisdictions have seen a decline in overall levels of reading, mathematical, and scientific literacy. This decline generally has occurred in a context of increasing expenditure on school education. And although gaps in student attainment tend to be smaller in these jurisdictions than in many other countries, they continue to be significant.

This chapter reflects briefly on possible explanations for these observed declines. More importantly, it considers what might be required to achieve further improvements in educational quality and equity in already high-performing school systems. The chapter observes that, although the learning systems established by these five jurisdictions have contributed to their high performances in areas such as reading, mathematical, and scientific literacy, their designs reflect traditional ways of thinking about learning, the curriculum, teaching, assessing, and educational qualifications—ways of thinking that may function as impediments to achieving the deeper transformations these jurisdictions now seek.

Ongoing Challenges

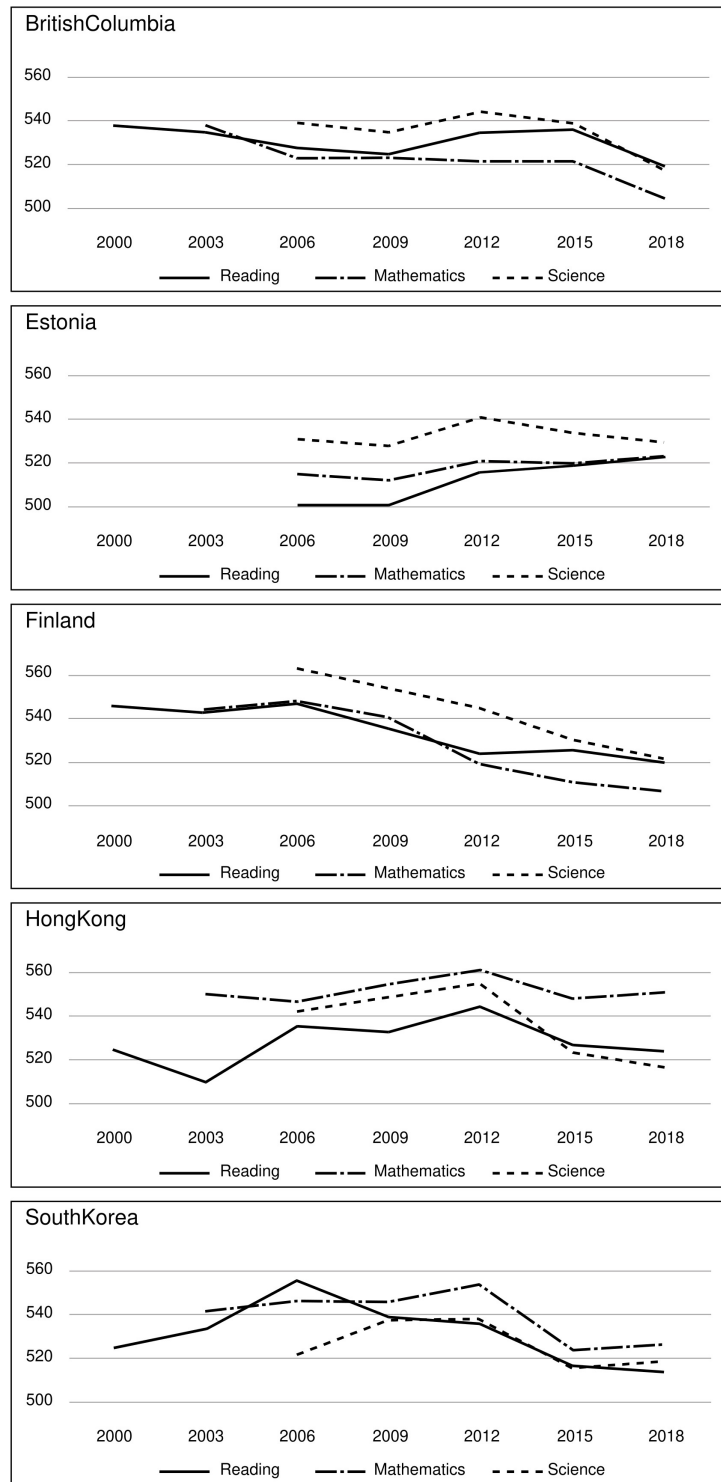
These five jurisdictions were selected for inclusion in this study in part because of their unusually high performances in the OECD's (Organisation for Economic Co-operation and Development) Programme for International Student Assessment (PISA) in the period 2000 to 2018. Figure 10.1 shows the average performances of 15-year-olds in these jurisdictions in reading, mathematical, and scientific literacy over this period. The OECD mean was set at 500 in 2000, but by 2018 had declined by 13 points to 487 in reading and by 11 points to 489 in mathematics and science.

Declining achievement

Although these jurisdictions all perform well above the OECD average and continue to be among the highest performers in the world, some have seen a significant decline in performance over time. By PISA

2018, reading in Finland had declined by 27 points, mathematics by 41 points, and science by 41 points since 2006. In British Columbia, mathematics had declined by 34 points since 2003, and science by 22 points since 2006. In Korea, reading declined by 42 points from 2006. And in Hong Kong, science declined by 38 points from 2012. These were all much larger declines than occurred on average in OECD countries. Only in Estonia was there a significant increase (in reading and mathematics).

Figure 10.1 Trends in Average Student Performance in PISA 2000 to 2018



Note. From "PISA 2018 Results (Volume 1). What Student Know and Can Do", by OECD, 2019b, p. 249. Copyright OECD Publishing 2019. Reprinted with permission.

To the extent that education reforms in the years prior to, and during, this 18-year period were designed to improve levels of student achievement in the traditionally core areas of reading, mathematics, and science, in most of these jurisdictions, PISA 2018 provided little evidence of their success. It is possible that factors outside the control of school education were responsible for the observed declines, and that these declines would have been greater without educational reforms. But if this is true, these external factors impacted jurisdictions differently and sometimes impacted the three learning areas differently within the same jurisdiction. A more likely explanation is that at least some of these declines were the direct result of changed education policies and practices.

An example is the significant decline in science literacy levels in Hong Kong between 2012 and 2018 in the absence of a similar decline in mathematics. In the period 2009–10, Hong Kong introduced a new academic structure that abolished the major subject streams (arts, science, commerce) at Grade 10 and made science an elective. Under the new structure, mathematics became one of four core subjects in the upper secondary school. This major change is likely to have contributed to the decline in science performance in Hong Kong.

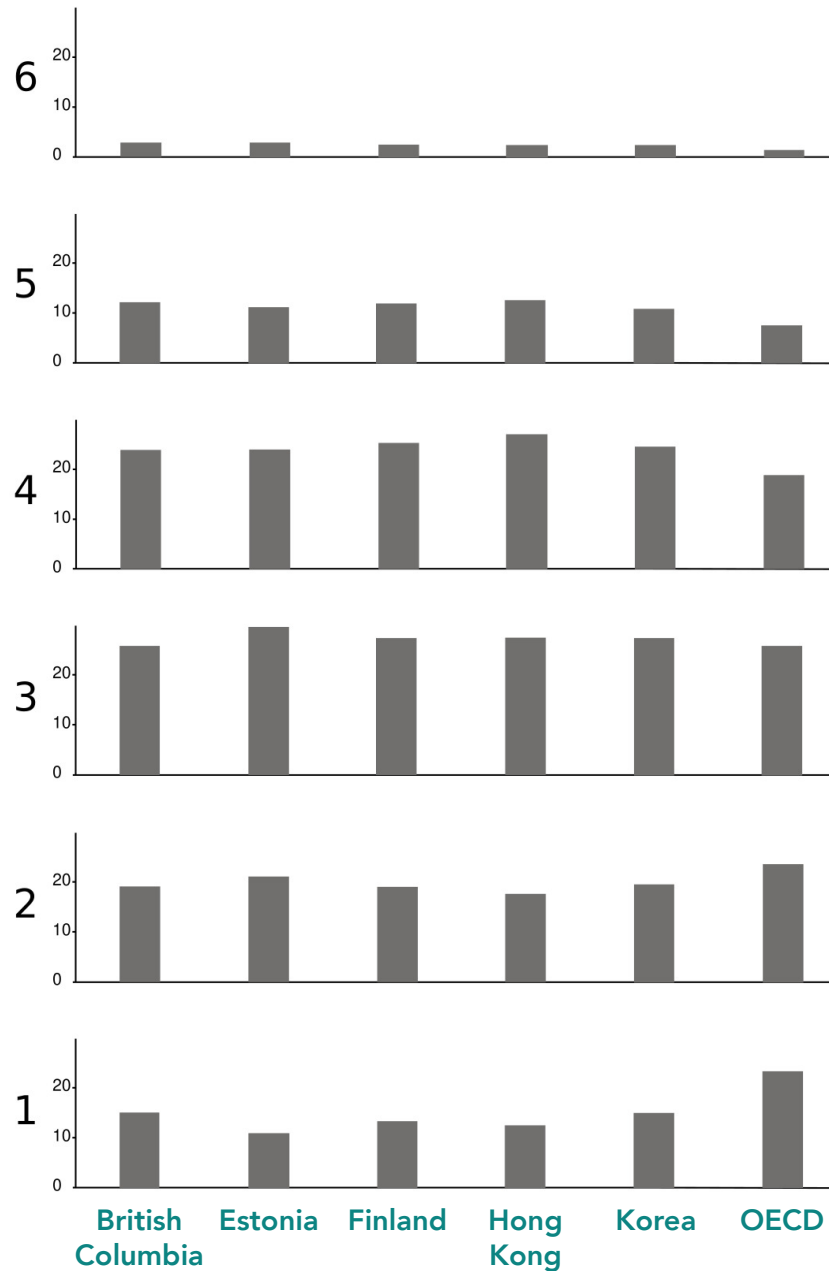
Variability in achievement

Another ongoing challenge in these jurisdictions is significant variability in students' levels of attainment. As outlined in Chapter 7, most of these jurisdictions make extraordinary efforts to ensure that no student is left behind in their learning, that individual learning difficulties are identified and addressed, and that every student is well prepared for the next grade's curriculum. In some jurisdictions, such as Finland, equal outcomes are sometimes viewed as the ultimate (albeit utopian) objective of efforts to ensure educational equality (Ouakrim-Soivio & Kupiainen). This has led to a strong emphasis on providing support to accelerate the learning of less advanced learners.

The results of these efforts are evident in Figure 10.2, which shows the percentage of 15-year-olds performing at each of six levels of reading proficiency in PISA 2018. Level 1 is the lowest level of proficiency; level 6, the highest. According to the OECD, students at level 1 often have difficulty when confronted with reading material that is unfamiliar to them or that is of moderate length and complexity. They usually need to be prompted with cues or instructions before they can engage with a text. The OECD considers level 2 to be the baseline level of proficiency required to take advantage of further learning opportunities and to participate fully in modern society. At this level, students can 'identify the main idea in a piece of text of moderate length, and can understand relationships or construe meaning within a limited part of the text when the information is not prominent by producing basic inferences' (OECD, 2019b, p. 91).

On average across these five jurisdictions, only 13% of 15-year-olds were still reading at level 1, compared to 24% in all OECD countries. Another 20% of students achieved only the 'minimally acceptable' level 2, again lower than the OECD average. These results reflect these jurisdictions' unusual success in reducing the numbers of students left behind in their reading.

Figure 10.2 Percentage of Students at Each Reading Proficiency Level, PISA 2018



Note. From “PISA 2018 Results (Volume 1). What Student Know and Can Do”, by OECD, 2019b, p. 212. Copyright OECD Publishing 2019. Reprinted with permission.

However, Figure 10.2 also makes clear the variability in students’ reading levels at age 15. Although about 13% of students in these jurisdictions failed to achieve the OECD’s minimum proficiency level, a similar percentage performed at the highest levels (5 and 6 combined). Evidence from Australia’s national assessment program suggests that the gap in reading between the most advanced 10% and the least advanced 10% of ninth grade students corresponds to about 5 to 6 years of school (Masters, 2020). In these jurisdictions, the standard deviation in PISA reading was on average .9 of Australia’s standard deviation, suggesting that the differences displayed in Figure 10.2 may correspond to 4 to 5 years of school.

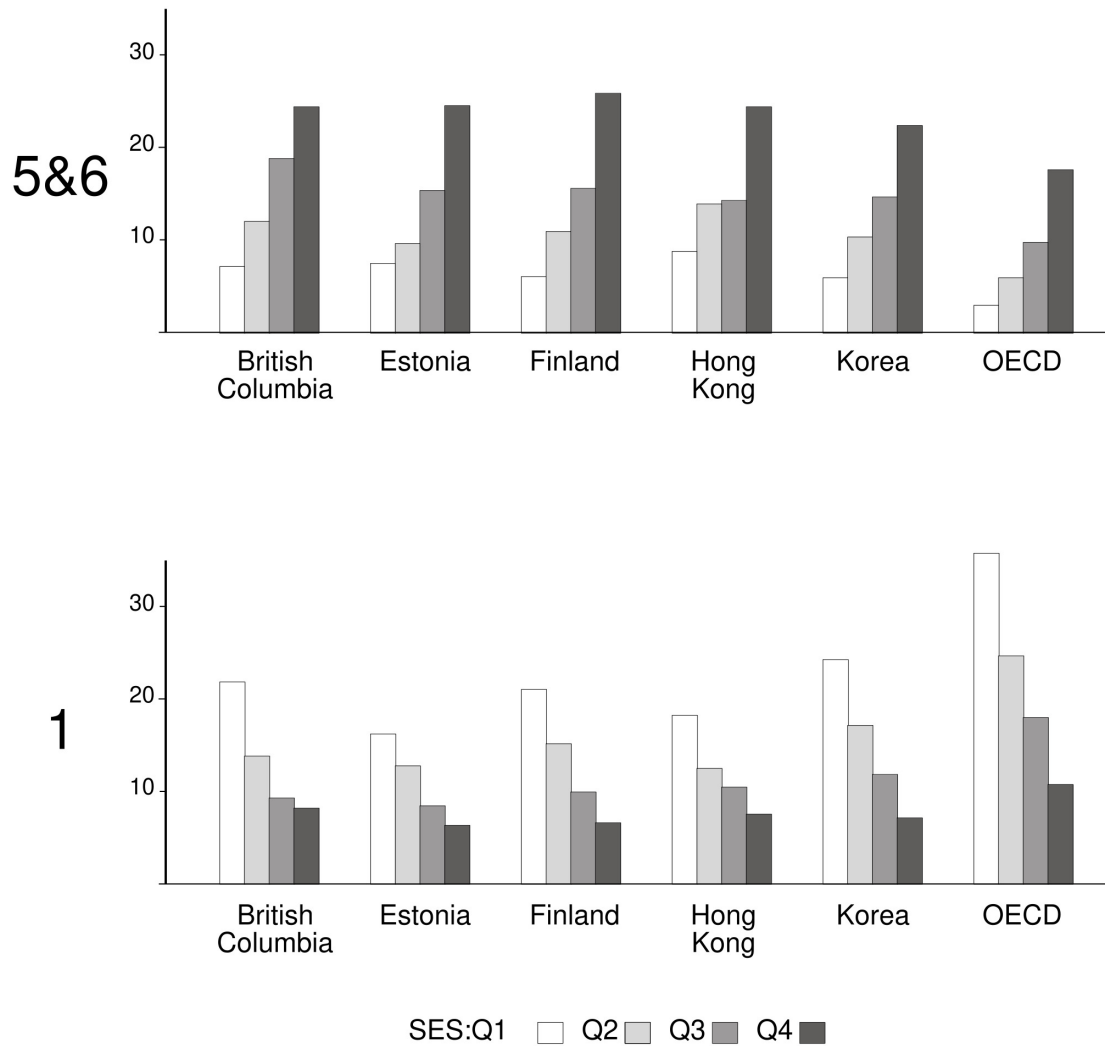
An implication is that, even in these five jurisdictions with their strong emphasis on equality and considerable efforts to ensure that every student's needs are met, and all students learn successfully, there is significant inequality of reading outcomes. At 15 years of age, about a third of students are still reading at or below the minimum proficiency level.

Influence of socioeconomic background

In 2018, these five jurisdictions were among 11 jurisdictions that performed above the OECD average in reading and in which the percentage of variation explained by socioeconomic status was below the OECD average (OECD, 2019c). In this relative sense, they were above average in performance, and also above average in equity.

However, in an absolute sense, there continues to be a strong relationship between performance and socioeconomic background in these five jurisdictions. Figure 10.3 shows the percentages of students in the lowest and highest reading levels in PISA 2018 for each of the socioeconomic quartiles. It can be seen that the impact of socioeconomic background is somewhat weaker in these jurisdictions than in OECD countries generally (and slightly weaker in Hong Kong than in Finland where the impact strengthened between 2009 and 2018 due to a greater decline in the performance of socioeconomically disadvantaged students) but is nevertheless marked.

Figure 10.3 Percentage of Students in Reading Proficiency Levels 5 & 6 and Level 1 by Socio-Economic Quartile, PISA 2018



Note. From “PISA 2018 Results (Volume 1). What Student Know and Can Do”, by OECD, 2019b, p. 210 (online data). Copyright OECD Publishing 2019. Reprinted with permission.

Some Reflections

A risk in focusing on jurisdictions' relative performances is to underestimate the magnitude of the absolute challenges they confront. These five jurisdictions continue to be high performers in a comparative sense; all perform well above the OECD mean. However, despite efforts in these jurisdictions to improve learning and raise standards over the past 2 decades, all but Estonia have seen at least some absolute declines in performance (Figure 10.1).

Relative to OECD countries generally, fewer students in these jurisdictions perform at low levels (Figure 10.2. In PISA 2018, variation in students' reading performances in these jurisdictions was similar to the OECD average (except in Estonia where it was lower), but lower than in a number of other countries including the United States and Singapore. However, in absolute terms, variation in these five jurisdictions remains significant. The difference between the most advanced and least advanced 15-year-olds probably represents 4 to 5 years of learning, despite the strong commitment of these school systems to equality and to ensuring that no student is left behind. And, despite unusual efforts to address the needs of the least advanced learners (and a level of success in doing this, about a third of 15-year-olds had reading levels at or below the standard considered by the OECD to be minimally adequate for life after school.

These five jurisdictions are sometimes characterized as displaying both high performance and high equity. The OECD defines equity as meaning that 'whatever variations there may be in education outcomes, they are not related to students' background, including socioeconomic status, gender or immigrant background' (OECD, 2019c, p. 15). By this definition, these jurisdictions are 'high equity' in a relative sense. However, as in all OECD countries, there continues to be a significant relationship between performance and socioeconomic background (Figure 10.3), as well as between performance and other student characteristics such as gender. It is questionable whether these jurisdictions have achieved 'high equity' in any absolute sense.

Reasons for decline?

Inevitably, observations of these kinds raise questions about why performances have slipped in most of these jurisdictions; why student performance gaps have been so difficult to close; what it would take in the future to increase performance levels and reduce gaps; and whether the limits of what is currently possible have been reached. Several explanations have been advanced for the observed declines, including changes in what is now valued and taught in schools; the changed nature of the student population; the changed capacity of the teacher workforce; and greater social divides that now leave many students alienated from schooling.

First, it is sometimes argued that, given the increased emphasis these jurisdictions have placed on competencies such as problem-solving, critical thinking, creative thinking, and collaborating, and personal attributes such as perseverance and a growth mindset, performances in traditional areas such as reading, mathematics, and science have become less relevant, leading to a decline in students' performances on these measures. The new challenge, it is argued, is to understand how effectively schools and school systems are developing newly prioritized competencies and attributes—in other words, that what is required is a set of 'new metrics'.

To date, limited work has been done on the conceptualization of many of these competencies and attributes, including on understanding and describing the nature of student growth in these areas. Even less work has been done on their valid and reliable assessment. In any case, the abilities to read and to apply mathematical concepts remain foundational to almost all areas of learning and to effective functioning in the workplace and adult life. And a level of scientific literacy remains necessary to make informed choices in areas such as personal health and well-being, the protection of the environment, and sustainable ways of living. There is also no obvious reason to expect that the challenges school systems

currently confront—for example, in addressing the influence of socioeconomic backgrounds on student learning—would be any different under a different set of metrics.

Second, it is sometimes argued that declines in performance reflect changes in students themselves, with the values and priorities of today's students being different from those of students 20 years ago. Students now live in a more connected, but also more siloed, world enabled by advances in technology and the growth of social media. In this world, it may be less obvious to young people that education and academic learning will deliver the futures to which they aspire. They may also be more cynical about the ability of governments and formal institutions—including schools—to meet their individual needs and enhance their quality of life. The result, it is argued, is lower levels of student commitment and effort to achieve at school, including a tendency for students to make less effort on international assessments such as PISA that have no obvious personal consequences.

Third, declines in student performance are sometimes attributed to declines in the number of teachers highly trained in the subjects they teach. In some countries, teacher shortages have seen more teachers teaching 'out of field', as well as the recruitment of teachers with lower levels of subject preparation and expertise. Even in these five high-performing jurisdictions, a view is sometimes expressed that today's teachers lack the depth of disciplinary knowledge expected of teachers in the past. And if a teacher lacks deep disciplinary knowledge, it is argued, then they are less likely to be able to teach content in depth or to address difficulties that individual learners are experiencing.

Fourth, changes in society itself are sometimes seen as explanations for declining student performance. It is argued that growing social divides have seen education deliver increased benefits to more socially advantaged students, but declining benefits to less advantaged students. Rather than being a path out of disadvantage, education is often seen by students and their families as reinforcing privilege and having limited personal relevance. The result, it is argued, is growing disenchantment with, and disengagement from, schooling—especially in the secondary years—leading to declines in overall performance.

It seems likely that the observed declines in these jurisdictions are the result of a complex mix of factors, possibly including the above explanations, but also including changes to curriculum expectations and structures. Some of these factors are capable of being addressed by schools and school systems; others are not.

The remainder of this chapter draws on findings from the science of learning and from the experiences of these top-performing school systems to suggest ways of designing a learning system to increase the likelihood of every student learning successfully. These findings and experiences have implications for almost all aspects of a learning system.

Changing Conceptions of Learners and Learning

Implicit in many of the reforms these jurisdictions have been making to their learning systems are new ways of thinking about learners and about learning itself. Many of the reform trajectories described in Chapters 4 to 9 can be understood as jurisdictions' responses to these changed ways of thinking.

In what follows, an attempt is made to look beyond current practices to future possibilities, and to be guided in this by the understandings and aspirations these jurisdictions have developed over recent decades. An important observation is that current learning systems were designed based on past understandings of learners and learning; they reflect traditional ways of thinking, sometimes referred to as the prevailing 'grammar' of schooling. As a result, they can be inconsistent with evolving understandings and so present obstacles to further transformation. New conceptions of learners and learning have implications for major components of a learning system, including the school curriculum, teaching, the assessment of learning, and the documentation of learning.

Rethinking capacity to learn

During the 20th century, learning systems around the world reflected an understanding that students differ in their ability to learn. It was taken for granted that some students were inherently good learners and would succeed at school, and others were inherently poor learners and would struggle with what schools tried to teach. This understanding had been reinforced by the 19th century conclusion that intelligence was normally distributed in the population. From the beginning of the 20th century, intelligence (IQ) tests were developed and widely administered in schools to establish individuals' capacities for learning. Schools and learning systems were designed to sort students accordingly. More intelligent students were streamed into schools and tracks that provided challenging academic learning and eventually led to professional careers and leadership roles in society. Less intelligent students were streamed into schools and tracks that provided lower levels of challenge and prepared them for manual and low-skill occupations.

In most jurisdictions in this study, learning systems are being built on a different understanding of capacity to learn. This understanding is that, with very few exceptions, every student is capable of learning what schools have to teach and, given well-targeted support and sufficient time, every student is capable of eventually achieving high standards. This is a more positive and optimistic view of human learning, and it changes the assumptions that underpin a learning system, as well as schools' expectations of individuals.

This change has occurred in part because students' employment destinations are changing. Manual and low-skill occupations, and many routine aspects of other occupations, are increasingly being automated. The emergence of knowledge economies and their new technologies has seen many kinds of work disappear. Today's occupations increasingly require understandings and skills that machines cannot deliver. These include skills in thinking, solving problems, creating novel ideas and solutions, collaborating with and caring for others, and making innovative uses of new technologies. In these jurisdictions, the kinds of learning once expected of only some students are increasingly expectations for all.

A changed approach to learners and their ability to learn is also being driven by the realization that past learning systems have reinforced existing social divisions. Despite intentions to the contrary, schools have been major contributors to reproducing the prevailing social order. Students from more advantaged backgrounds have been over-represented in school tracks leading to high-status occupations; students from less advantaged backgrounds have been over-represented in tracks leading to low-status occupations. The conventional belief that some students have less capacity for learning has provided a convenient rationale for school sorting mechanisms that have worked in favour of social elites and to the detriment of the socioeconomically disadvantaged.

And further support for a changed view of learners has come from emerging scientific understandings of human learning and the conditions that promote successful learning. These understandings are being developed through the learning sciences, including through advances in neuroscience and the study of brain plasticity. In recent decades, research has demonstrated the capacity of the human brain to develop and learn throughout the lifespan. These findings are raising questions about the limits of what individuals could learn given the right conditions. They offer support for the assumptions being made in these jurisdictions that almost all students can learn what schools teach, given time and the necessary support.

Rethinking what it means to learn successfully

It is also possible to see in these jurisdictions the beginnings of a changed way of thinking about learning. Traditional learning systems provide an operational definition of what it means to learn successfully. Essential to this definition is a body of curriculum content to be taught and learnt in a specified period of time. Under the influence of the American behavioral objectives movement, this body of content is

commonly represented as a list of objectives (or outcomes) that students are expected to be able to be able to demonstrate as a result of teaching and learning. These objectives may include specific facts, procedures, skills, and/or student understandings. Normally, all students commence learning this content at the same time and are given the same amount of time to learn it. In other words, learning is heavily time-bound. Upon completion of the period of instruction, assessments are undertaken to establish how much of the taught content each student can demonstrate, which is then reported as a percentage, score, or grade. Students then all move to the next body of content where the process is repeated.

It is commonly observed—including in some of these jurisdictions—that this approach can result in large volumes of content to be taught and learnt as curriculum developers attempt to provide comprehensive coverage of a topic or area of learning. In many jurisdictions, this has resulted in ‘crowded’ curricula that reforms have then attempted to pare back. It has also been observed that this approach can lead to ‘flat’ curricula in which all objectives appear equally important. When curricula are crowded and flat, and teachers see their task as ensuring that every prescribed objective is taught, the result can be time pressure, relatively superficial forms of learning, and an overemphasis on rote learning and memorization for reproduction in tests and examinations.

As seen in Chapter 4, in these jurisdictions, teaching and learning are being refocused to give greater priority to the development of thinking skills, deeper conceptual understandings, and students’ abilities to apply what they learn to meaningful contexts. This is sometimes referred to as shifting the emphasis from what students know to what they can do with what they know or giving greater priority to competence in using knowledge. Subject knowledge remains essential, but the balance is adjusted, including by giving greater priority to skills in knowledge application such as gathering and analyzing information, critical and creative thinking, problem-solving, collaborating, and communicating with others.

A consequence of this refocusing is that the kinds of learning now being given greater priority are not readily conceptualized as lists of specific learning objectives to be mastered in a limited instructional period. Deeper understandings of important concepts, principles, and methods in an area of learning usually develop over extended periods of time, sometimes over many years. This is also true of skills in problem-solving, thinking, and working as part of a team, and attributes such as resilience and ethical decision-making. Learning intentions of these kinds do not lend themselves to being recorded as present or absent on a checklist. Instead, it is generally more appropriate to recognize the progressive nature of their long-term development, to describe and illustrate this growth, and to use these understandings to establish the points individuals have reached in their learning and to monitor the progress they make over time.

This is a significant shift in mindset. What it means to learn successfully is now defined operationally not simply as the proportion of a body of taught content a student can demonstrate, but as the progress an individual makes over time—usually toward the development of more sophisticated knowledge, deeper conceptual understanding, higher levels of skill, or more incisive and innovative thinking. In at least some of these jurisdictions, the conception of school learning as the mastery of discrete time-bound objectives is being overtaken by an understanding of learning as leading to individual growth. And efforts are being made to describe progressions of long-term growth not tied to any specific instructional period. These efforts recognize learning as an ongoing, potentially lifelong, process through which learners progressively connect new information to existing knowledge, resulting in new knowledge and skills, and deeper understandings.

This has significant implications for the evaluation of learning. Traditionally, every student’s learning success has been evaluated against the same body of taught curriculum content. In this sense, all students in the same grade have been judged against the same finish line. However, in practice, students usually commence learning from very different starting points. In reading and mathematics, individuals’ levels of attainment at the beginning of any period of instruction are likely to vary by the equivalent of 5 or

more years of learning. As a result, more advanced students often begin a period of instruction on track to achieve higher grades, and less advanced students, to achieve lower grades. In contrast, when learning is evaluated as the progress an individual makes, regardless of their starting point, what it means to learn successfully is redefined. The new expectation is that every student will make excellent progress in their learning, and the challenge is to target teaching and learning opportunities to meet individual learners at their points of need and so maximize each student's likelihood of successful further learning.

It is common in these five jurisdictions to refer to 'student-centered' learning. The intention of student-centered learning is to replace approaches that treat all students equally with approaches more responsive to the backgrounds, starting points, and learning needs of individual learners. Treating all students equally includes assuming that every student is more or less equally ready to begin learning the same body of content at the same time, in the same way, for the same amount of time. These jurisdictions have recognized that success in learning depends on connecting with individuals' current levels of attainment, their cultural and other backgrounds, interests and motivations, and personal conceptions of what they are learning. The practice of treating all students equally is being replaced by a conception of learning as personal growth promoted by recognizing learners as individuals with varying needs.

Implications for the School Curriculum

These changing conceptions of learners and learning have profound implications for the design of the school curriculum, which are only beginning to have an impact in most jurisdictions.

An inclusive curriculum

If it is accepted that, with very few exceptions, all students can learn what schools have to teach, then the school curriculum must be designed to be inclusive of all students. In other words, every student must have access to, and be expected to progress through, the same core curriculum, at least up to branching points where they can choose to specialize. The concept of an inclusive curriculum is widely espoused in principle, but the implications for the structuring of the curriculum are not always realized in practice. Inclusion requires that every student progresses on the same path of learning, as a matter of entitlement. This leaves no room for parallel tracks such as 'advanced', 'academic', 'general', or 'remedial' tracks that impose ceilings on how far some individuals can progress. An inclusive curriculum recognizes that students are at different points in their learning and may require different forms of learning support, but in any given area of learning, ensures that every student progresses over time through the same curriculum content.

When different schools and/or tracks are created for students who are more or less advanced in their learning, inclusivity is undermined. Rather than treating all students as being on the same curriculum path—although inevitably at different points on that path—tracking places students on different paths with different curricula and different end points, often with some tracks leading to dead ends. Tracking can also result in students being labelled as inherently better or worse learners, subverting the idea that almost every student is capable of excellent progress and eventual high achievement given the right conditions.

A focus on deep learning

Studies of expertise reveal that experts of all kinds have extensive knowledge of their subjects, and that this knowledge is organized around important concepts and principles that allow experts to see patterns in information, to transfer and apply their knowledge to new and unseen contexts, and to think critically and creatively about problems. This observation suggests that the school curriculum should give greater priority to developing deeper conceptual understandings and the ability to apply those understandings to meaningful contexts. Currently, many school curricula are designed instead to build extensive factual and

procedural knowledge, sometimes at the expense of conceptual understanding. This is a particular issue in crowded curricula that promote memorization and reproduction of taught content, reinforced by aligned tests and examinations—a feature of many secondary school curricula.

The decision to give greater priority to conceptual understanding, student thinking, and the ability to apply knowledge (often from different areas of learning) to solve meaningful problems is a direct challenge to common ways of presenting the school curriculum. These forms of learning are not readily presented as course objectives to be recorded as achieved or not achieved. Instead, they develop over extended periods of time, making a continuum or progression of development a more appropriate model of learning than a checklist of sequenced instructional objectives. In some jurisdictions, this is recognized and developmental continua are being constructed as frames of reference for promoting, assessing, and monitoring the growth of conceptual understanding, thinking, personal attributes, and skills in knowledge application.

An integrated curriculum

Research into the nature of expertise also reveals that knowledge, understandings, skills, and attitudes are integrated in expert practice. In contrast to school curricula, expertise does not distinguish knowledge from skills, theory from practice, disciplines from general competencies, or academic learning from vocational learning. Experts bring knowledge of different kinds, deep understandings, the ability to think critically and creatively, as well as attitudes and values to the solution of problems. This suggests that school curricula also should be deeply integrated. The ability to think about issues, to apply technologies, and to communicate and collaborate with others are integral aspects of competence in any discipline, not separate (generic) skills to be imported into a subject and applied.

A culturally inclusive curriculum

Other research has shown that successful learning depends on the alignment of learning opportunities with learners' backgrounds and circumstances. Social and cultural factors play important roles in learning success. For example, students are less likely to learn successfully in environments that are culturally alien. Historically, many school curricula have reflected a dominant culture and language and have been insensitive to the backgrounds and world views of students of other cultures. An inclusive curriculum embraces diversity and provides flexibility for teachers to build connections to students' circumstances and backgrounds so that all students can see themselves and their cultures reflected in the curriculum.

A more flexible curriculum

Successful learning depends on the alignment of learning opportunities with the points individuals have reached in their learning. It has long been known that the way to maximize the likelihood of successful learning is to provide individuals with learning opportunities that function as stretch challenges. Learners generally do not learn effectively when presented with material that they have already mastered or with challenges well within their comfort zones. They also do not learn effectively when presented with material so far beyond their current level of attainment that they lack the prerequisites for success. At the same time, advances in educational measurement have revealed the variability in students' levels of attainment. Students in the same grade of school usually vary widely in the points they have reached in their learning. Commonly, the difference between the most and least advanced learners in any grade is equivalent to the average progress students make over 5 or more years of school. In other words, students often have very different learning needs; material at an appropriate level for some can be inappropriately easy or inappropriately difficult for others.

Despite this, many school curricula expect all students in a grade to learn the same curriculum content, commencing at the same time, and for the same amount of time. As a result, less advanced students often

struggle and fall further behind as the curriculum for each grade becomes increasingly beyond their reach, and more advanced students are often under-challenged year after year and so do not achieve the levels of which they are capable. Underlying this practice is an ‘industrial’ model of schooling that ties learning to specified time periods and requires all students to move in lockstep from one curriculum to the next.

Some jurisdictions are challenging this model. For example, Scotland’s Curriculum for Excellence expects all students to follow the same path of learning through five curriculum levels during their schooling, but provides flexibility in relation to timing (OECD, 2021). The curriculum expects that ‘some children and young people will start learning at these levels earlier, and others later, depending upon individual needs and aptitudes’ (The Scottish Government, 2008, p. 28). All students are expected to progress through the same five levels and eventually to achieve the same high standards, but Scotland’s curriculum reverses the usual curriculum expectation—it holds standards constant and allows time to vary, rather than holding time constant with consequent variations in the levels students attain. Similar models have been proposed for the school curriculum in Wales (Davidson, 2015) and New South Wales, Australia (Masters, 2020) and, as part of its vision for 2035, Estonia anticipates a future national curriculum in which ‘learners move on their learning path at their own pace’ (Estonian Ministry of Education and Research, 2019, p. 15).

A degree of choice

Finally, successful learning depends on the alignment of learning opportunities with individual learners’ interests and motivations. Ideally, students would be intrinsically motivated to learn by questions or problems of personal interest. However, much school learning is extrinsically motivated, with students learning to meet the expectations of teachers and parents or to perform well on tests and examinations. Intrinsically motivated learning is less likely when curricula tightly specify what, when, and how every student is to learn. Within common curriculum frameworks, there must be flexibility for students to exercise a degree of choice (or agency) in relation to their learning.

Implications for Teaching

Changing conceptions of learners and learning also have profound implications for teaching. Effective teachers bring to the classroom a belief that every student is capable of learning successfully and they convey this belief through their expectations of students. They model a growth mindset, reflecting their conviction that, with effort, every student can make excellent ongoing progress in their learning and, with time and support, can achieve high standards.

But they are also aware that students are likely to be at very different points in their knowledge and understanding, and that successful teaching and learning depend on meeting individuals where they are. This does not mean lowering their expectation that every student will make excellent progress or their belief that every student is capable of eventually reaching the same high standards, but it does mean recognizing that these objectives are more likely to be met when teaching is differentiated to address individuals’ immediate learning needs. Effective teachers understand that the way to maximize every student’s learning is to target teaching on their current level of attainment and learning needs, and that this not only is equitable, but also is a key to lifting performance levels overall.

Thus, an essential aspect of effective teaching is the process of establishing where learners are in their learning so that their current needs can be identified and addressed. The aim is to establish best next steps for teaching and learning. This may include identifying obstacles to further progress such as errors that individuals are making or misconceptions they have developed. Diagnostic assessments of this kind can be crucial to understanding a student’s learning and targeting teaching to maximum effect.

And successful teachers build relationships with students that allow them to connect with their backgrounds and starting points. They prioritize social and emotional health and well-being and

understand the importance of these to successful learning. They also understand the importance of cultural inclusion and the role that emotions play in learning, including the importance of intrinsic motivation, curiosity, and wonder.

In the five jurisdictions in this study, teaching focused on addressing the learning needs of individual learners is often referred to as ‘personalized’ or ‘student-centered’. It is seen as an alternative to delivering the same body of content and learning experiences to everybody in the same way at the same time. Effective teachers also bring to the classroom particular beliefs about the kinds of learning that are worth promoting. In particular, they prioritize the deep learning of content, student thinking, skills in transferring and applying knowledge, and the development of valued personal attributes. They also have a long-term perspective on learning. They recognize that students are on trajectories of learning that began early in their lives and that will likely continue throughout the lifespan. With this understanding, they see teaching not so much as delivering a body of curriculum content as contributing to, and supporting, each learner’s growing knowledge, skills and understandings, and their ongoing development as an engaged and caring person.

Teaching of this kind depends on clarity about what is essential. It prioritizes the development of deeper understandings of essential concepts, principles, and methods in an area of learning. It builds factual knowledge but avoids encouraging superficial memorization and reproductive learning resulting from attempts to cover large amounts of material. It recognizes that, in teaching, less can be more. Effective teachers also appreciate that particular topics (such as coral reefs or the French revolution), while providing important factual knowledge, also provide crucial contexts for developing deeper conceptual understanding and thinking.

Such teaching is generally not possible unless teachers themselves have deep understandings of essential concepts and principles in a subject and of how student understandings typically unfold. This is an important aspect of teachers’ pedagogical content knowledge. Effective teachers are able to assess and monitor the depth of students’ understandings and to provide targeted learning opportunities that challenge and extend those understandings. In general, this requires teachers who are experts in their fields.

Implications for Assessing Learning

In teaching of this kind, the assessment and monitoring of student learning are integral to effective pedagogy. A traditional view of assessment is that it follows teaching to determine how much of what has been taught a student has successfully learnt. But changing conceptions of learners and learning are turning this view on its head. Assessment is increasingly seen as the process of establishing and understanding the points individuals have reached in their long-term learning and development for the purposes of identifying next steps for teaching, communicating the stages individuals have reached, and monitoring the progress they make over time.

This changed understanding of assessment is related to, but different from, the long-standing distinction between formative assessments made during a course to guide teaching and learning, and summative assessments made at the end of a course to evaluate and record learning success. These two forms of assessment are traditionally made in relation to a body of taught content. However, when the purpose of assessment is to establish the points individuals have reached in their long-term progress in an area of learning, the resulting information can be used both formatively to guide next steps and summatively to evaluate and record progress made over time. The process of establishing where learners are in their learning may include the detailed diagnosis of individuals’ strengths and weaknesses. Rather than distinguishing different forms of assessment, the formative–summative dichotomy now distinguishes different ways of using the same assessment information.

Importantly, under this approach, the frame of reference for assessment changes. Rather than being made in relation to a defined body of taught content, assessments are made against a map of long-term progress in an area of learning. This map recognizes, describes, and illustrates the ongoing, progressive nature of developing proficiency in an area of learning. By describing growth in knowledge, understandings, skills, and competencies, it underpins and gives sequence to a curriculum. It also enables teachers to establish the points individuals have reached in their learning, regardless of their age or grade, to target their teaching more effectively, and to monitor the progress learners make over time.

The concept of progress or growth is at the heart of this approach to assessment. Successful learning is assumed to be reflected in observed growth toward more sophisticated knowledge, deeper understandings, higher levels of skill, and more developed personal attributes. And when student progress is assessed against a map of developing proficiency, teachers, students, and parents have a frame of reference for understanding the points individuals have reached in their long-term development, setting appropriate stretch challenges for further learning, and monitoring growth over time.

Implications for Documenting Attainment and Progress

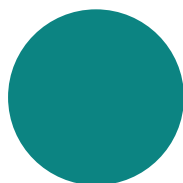
This understanding of assessment has accompanying implications for approaches to reporting and communicating student learning. Traditional approaches to reporting student success indicate the proportion of taught content a student is able to demonstrate. This may be based on tests or examinations of that content and be communicated as a score or percentage, which may also then be converted to a letter grade. The grades students are awarded at the end of a period of instruction are assumed to indicate effort and learning success during that period. Rubrics describing levels of mastery of taught content (as in Box 5.6) also may be developed and used for this purpose.

These approaches to reporting judge students' performances against the same finish line (for example, the curriculum expectations for their grade, but usually fail to consider differences in students' starting points. As noted above, at the beginning of any period of instruction, students' levels of attainment may differ by the equivalent of 5 or more years of learning. Rather than commencing on the same starting line, students are widely spread in the direction of the finish line. Some are already on track to achieve high grades; others are on track to achieve low grades. As a result, the grades students conventionally receive at the end of a period of instruction not only reflect differences in effort and learning, but also differences in starting points.

As a result, students who are behind in their learning at the start of a school year often struggle and receive low grades for the year. If all students are required to move to the next year's curriculum at the same time, these students often also commence the following year behind. Over time, many fall increasingly far behind as the curriculum for the year becomes increasingly beyond their reach. By holding time for learning constant and requiring all students to move in lockstep, schools often function as highly effective sorting mechanisms.

Less advanced students who begin each year toward the back of the pack often receive the same or similar low grades year after year. These grades report performance against the year's curriculum expectations, but they do not indicate how much absolute progress a student may have made in their learning during the year. Students who begin well behind may make good progress but still receive low grades for the year. A student who receives a grade of, say 'D', year after year is given no sense of the absolute progress they are making, and worse, may conclude that there is something stable about their ability to learn—they are

a 'D student'. The use of labels such as 'emerging' in place of letter grades does not change this. New conceptions of learners and learning call for better approaches to communicating attainment and progress. When student learning is assessed against a map of long-term progress in an area of learning, the important information becomes the point an individual has reached (what they currently know, understand, and can do) and what progress they have made over some period of time. Expectations can still be set for the points all students should reach by key times in their schooling. However, information about where individuals are in their long-term progress provides a more effective guide to next steps than a letter grade, and information about growth over time provides a superior basis for monitoring learning success and evaluating the effectiveness of teaching.



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