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TEACHING POLICY AROUND THE WORLD

Three teachers huddle around a laptop (Link 1-1) in the school library at Kranji Secondary School in Singapore. Rosmiliah, a senior teacher, and her two colleagues are engaged in an intense discussion of geographic information systems (GIS) and how to incorporate them into their teaching of geography. The trio constitutes just one of many teacher groups working on year-long projects to create new and innovative learning resources.

Along with each of their colleagues, these teachers will share their research findings at an annual learning festival attended by academics, teacher educators, and other practitioners, with awards given for the best projects. Rosmiliah laughs as she explains that none of the teachers was initially familiar with GIS, but by working together, they had incorporated it into a field research project with students, who found the new lessons fun and engaging. She explains:

> Being a teacher, if you just keep on doing the same things every time without knowing what others are doing, or different ways to do it, you may be a bit boring—students may not find your lessons engaging. . . Teaching is alive . . . so the teacher is always learning as well.

In addition to these professional learning community groups, all teachers at Kranji take part in the school-wide "Learn and Grow" professional development workshops held fortnightly, in which the senior teachers introduce and model specific pedagogical strategies in "Skillful Teacher" workshops. In their 15 hours per week of non-teaching time, teachers plan together and may engage in lesson study

or action research within their departments. Beginners receive regular mentoring from senior teachers like Rosmiliah. As teachers gain experience, they have opportunities to expand their skills and climb a career ladder that makes their expertise available to others. This includes teachers in a dozen other schools that learn together in a network, or cluster, and those who attend sessions facilitated by master teachers at the Singapore Teachers Academy.

This rich learning environment for teachers is not the work of a single innovative school or principal: Kranji is much like any other neighborhood school in Singapore. The opportunities for teachers to collaborate and engage in professional learning are embedded systemically in Singapore's education policy.

Although Singapore is well known internationally for its strong investment and thoughtful designs for education, it is not alone. A growing body of research has found that high-performing countries have in common a set of strategies for developing, supporting, and sustaining the ongoing learning and development of their teachers and school leaders (Barber & Mourshed, 2007; Lee, Lee, & Low, 2013; Tucker, 2011). These countries not only train individual educators well, but also they deliberately organize the sharing of expertise among teachers and administrators within and across schools so that the system as a whole becomes ever more effective. And they not only cultivate innovative practices but also they incorporate them into the system as a whole, rather than leaving them as exceptions at the margins.

This book describes how this seemingly magical work is done: how a number of high-performing education systems create a coherent set of policies designed to ensure quality teaching in all communities—and how the results of these policies are manifested in practice. Across three continents and five countries, we examined seven jurisdictions that have worked to develop comprehensive teaching policy systems: Singapore and Finland, the states of New South Wales and Victoria in Australia, the provinces of Alberta and Ontario in Canada, and the province of Shanghai in China.

Serving increasingly diverse student populations while seeking to meet more challenging learning standards geared to 21st-century expectations, each of these jurisdictions has focused intently on how to develop and support higher-quality teaching across all of its schools. This book describes how governments in these places have carefully developed, planned, and implemented what we call a *teaching and learning system* and the lessons that can be learned from these systems.

What Kinds of Policies Affect Teaching?

Creating such a system does not actually require magic. It requires purposeful policies in a number of areas that shape the teaching force and the work of teachers:

- *Recruitment:* identifying and selecting individuals with the right blend of academic abilities and personal attributes to become effective teachers
- *Teacher preparation:* providing candidates with deep content knowledge and understanding of pedagogy, together with the clinical learning that translates these into quality teaching
- *Induction and mentoring:* ensuring that early-career teachers have the opportunity to observe, plan with, and learn from experienced teachers as they enter the profession
- *Professional learning:* ensuring ongoing learning opportunities for teachers to continually develop and improve their practice and to share their expertise
- *Teacher feedback and appraisal:* creating systems for providing feedback to teachers about their practice and for furthering teachers' ongoing development as professionals
- *Career and leadership development:* providing pathways for teachers that support individual growth and the development of strong educational leaders

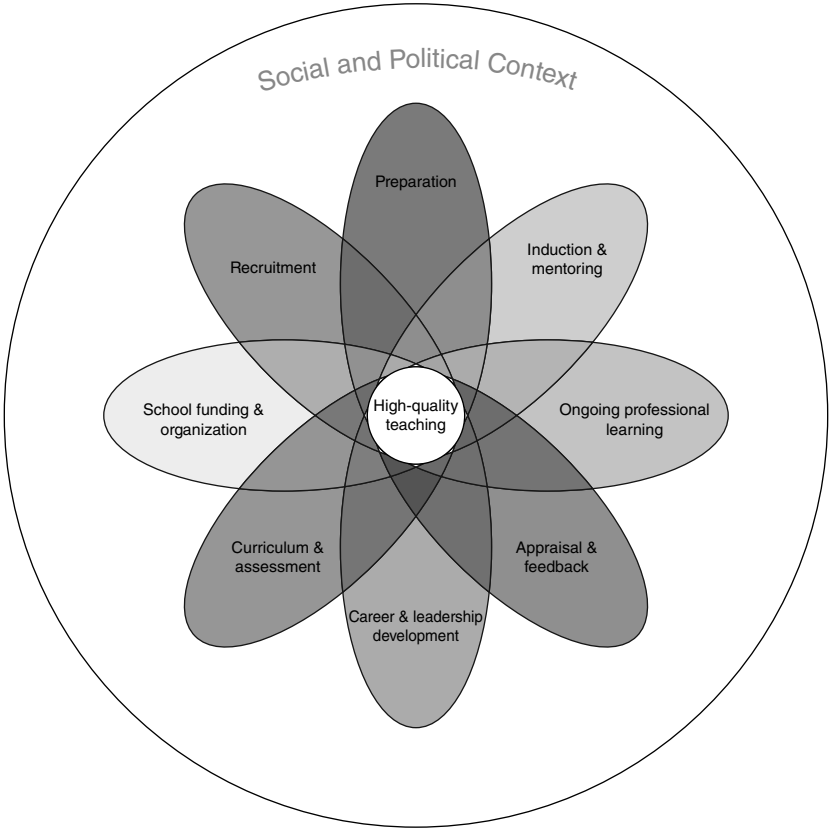
These policy areas are mutually supportive. Recruitment strategies that select capable individuals well suited to teaching may help initial teacher education programs produce high-quality teacher graduates, even as high-quality preparation serves as a magnet for talented candidates. Induction and mentoring practices that effectively aid teachers' transition to the classroom are known to support retention in the profession, helping teachers gain in experience and effectiveness (Darling-Hammond, 1998; Ingersoll & Strong, 2011). Opportunities for veteran teachers to offer mentoring can also enhance their career satisfaction and retention as well as their ongoing learning and growing expertise. Effective feedback can inform professional learning, highlighting areas for development that support quality teaching. As teaching becomes a public activity—with educators sharing and receiving feedback on their practice—the profession as a whole is strengthened.

Beyond these areas of teacher policy, it is important to understand how other educational policies inform and enable quality teaching and learning to take place.

- *School curriculum, assessments, and accountability* systems shape what teachers are expected to teach and how students are expected to show their learning—which can greatly influence instruction.
- *School funding strategies* shape the resources and supports teachers have available to do their work and the degree to which teachers themselves are equitably distributed.
- *School organization and scheduling* influence the time teachers have available to collaborate and learn from each other.

These elements play out within a social and political context that shapes school conditions, supports for children and families, and the design and implementation of policies. We illustrate how these components interact in Figure 1–1.

Figure 1–1 Policies in a Teaching and Learning System



Responding to different educational challenges, countries and provinces differ in their relative emphasis on elements of the policy system and the manner in which policies are implemented. For example, as we show in subsequent chapters, Finland has placed particular emphasis on effective recruitment strategies and strong teacher preparation; in Singapore, collaborative professional learning and well-developed career pathways are key levers; in Shanghai, intensive mentoring of beginners and development of all teachers' practice is facilitated by school designs that provide significant time for collaboration and learning. Though the emphasis and balance of policies may vary, none of these functions is neglected in well-functioning policy environments.

Every country faces differing circumstances and contexts for education. Moreover, implementation strategies necessarily vary, because each context poses different challenges that must be addressed in order to avoid the "slip between the cup and the lip" that can undermine policy intentions when initiatives make their way to schools. However, common elements and themes emerge in these settings that, taken with the proper analytical grain of salt, can yield important lessons for improving education policy and teaching quality across other nations and settings.

We know that the factors shaping teaching and student outcomes are complex, and so we have sought to avoid facile explanations or silver bullet solutions. Instead, building on our examination of hundreds of documents and in-country interviews at every level of these systems, coupled with in-depth observations in schools, we provide rich descriptions of the policies and their implementation in these educational systems. (See Appendix A for a description of the study's methodology.) We further examine how these approaches contribute to well-developed teaching practices and in turn facilitate learning that prepares students for the growing complexity of 21st-century economies. Through this investigation, we aim to uncover lessons and principles that might inform the way policy makers and practitioners think about educational policy as it may apply to their own settings.

Why Study International Teaching Policy?

Research into educational performance around the globe increasingly points to the role of a strong teaching workforce in achieving a high-performing system. In a now well-known study of 25 education systems, researchers Barber and Mourshed (2007) found that these countries had several features in common. First, policies were designed to find people with the right skills and attributes to become teachers. Competitive

salaries helped make the profession attractive to potential candidates, and high standards were set for entry into and graduation from initial teacher education programs. Together these helped raise the status of teaching, creating a virtuous cycle for ongoing recruitment.

Second, these systems developed teacher education programs that promoted the integration of theory with the building of practical skills, and they established policies for ongoing learning that helped teachers identify areas for growth, learn from each other, and improve their instructional practices. Coaching and professional learning opportunities helped support ongoing teacher development and instructional leadership.

Third, these systems created strategies to ensure that all students, not just some, had access to high-quality instruction. As the report notes:

> Getting the right people to become teachers and developing them into effective instructors gives school systems the capacity they need to deliver the improved instruction that leads to improved outcomes. High-performing school systems go further than this and put in place processes which are designed to ensure that every child is able to benefit from this increased capacity. (Barber & Mourshed, 2007, p. 34)

These processes can include not only the equitable distribution of well-qualified educators and overall school funding but also the additional instructional, health, and welfare supports that enable students to benefit from quality teaching. Studies from the Organization for Economic Cooperation and Development (OECD) find that allocating resources to better address students' needs helps disrupt the usually strong relationship between students' socioeconomic background and their achievement (OECD, 2013a, 2013b).

Although there is widespread agreement that attention to educator recruitment, preparation, and development matters, less is understood about how countries and states create and manage such systems in very different contexts and how they integrate their teaching policies with their approaches to curriculum, assessment, accountability, and school design—creating a comprehensive teaching and learning system. We take on these questions in this study.

Policy systems that support high-quality teaching practices are of intense importance in an era characterized by rapid knowledge expansion and change. Researchers at the University of California at Berkeley have shown that more new knowledge was created between 1999 and 2003 than in the entire history of the world preceding—and knowledge growth continues exponentially (Lyman & Varian, 2003). Technology knowledge is doubling every 11 months, and technology advances are

continually automating routine functions that once created low-skilled jobs. Not only can computers check you in at the airport and check you out at the grocery store, they can also, together with robotics, clean houses, conduct surgery, and steer self-driving cars.

University of Oxford researchers estimated that 47% of more than 700 present-day occupations in the US economy are susceptible to being computerized (Frey & Osborne, 2013). And many of the fastest-growing (and highest-paying) jobs in today's economy did not exist 10 years ago: mobile application developer, digital strategist, market research data miner, social media consultant, and sustainability expert (Casserly, 2012).

Students entering school today will leave to work in jobs that do not yet exist, using knowledge that has not yet been discovered and technologies that have not yet been invented, facing complex problems our generation has been unable to solve. As a consequence, the top skills demanded by employers are not merely following directions and counting change but the abilities to make sense out of complex information and events, think creatively to solve novel problems, work well with others, engage effectively in cross-cultural contexts, and manage many forms of media as well as quantitative data in sophisticated ways. Students today need much more than simply to recall a canon of received knowledge. They need to be able to find, analyze, synthesize, evaluate, and apply knowledge to new ideas, answers, and solutions; communicate in multiple forms, use new technologies, and collaborate with others; and become able to learn on their own throughout life.

Meanwhile, growing international migration is creating increasingly diverse societies. Young people, especially, are also likely to engage in multiple online communities. Each of these brings people with different perspectives and cultures into closer proximity and contact. Such exchanges yield new ideas, innovations, and possibilities, as well as transforming traditional notions of community, citizenship, and democracy.

The kind of teaching required to support contemporary learning goals in this context is very different from what was required when the goal was merely to "cover the curriculum" and "get through the book," enabling some students to succeed if they could and others to fail. In order to enable very diverse students to learn the higher-order skills once reserved for a tiny few, teachers need a range of new skills. They must understand content more deeply and flexibly; they must understand the science of learning—how children learn and develop in cultural contexts, generally and individually, within and across distinctive subject areas; they must understand how to support language acquisition and use for

native and nonnative students; they must develop teaching strategies that foster analysis and reasoning; and they must continually incorporate appropriate technologies into their teaching practice.

"Chalk and talk" methods used to impart facts will need to give way to methods for engaging students in applied learning, facilitated by teachers. Teachers will be increasingly called on to collect and analyze a range of assessment data to ensure all students are learning and provide differentiated teaching to students of varying abilities in the same classroom. All of these expectations have implications for how teachers are trained, the supports that they receive early in their careers, and their ongoing professional learning to help them develop and maintain effective teaching practices.

Beyond teachers' work in classrooms—and through the other places and modalities that will no doubt evolve—educators must learn how to redesign schools and education systems to support these goals. Governments must reconceptualize how they think about education, the role of schools, and what and how students are taught. It is therefore critical to pay attention not just to single policies but also to the ways in which policies interact and how they function as a policy *system* that together provides an enabling environment in which quality teaching and learning can occur and evolve to meet new demands. We take up all of these issues in this book.

With all of these factors in mind, we focus on *teaching* because it is where the rubber hits the road, so to speak—where the direct engagement between students and the content and processes of their learning occurs and can be most effectively leveraged. Teachers facilitate this process, and the strategic moves they make—in selecting and orchestrating materials, activities, examples, and supports—are the primary mediators of learning.

Why Study These Jurisdictions?

The jurisdictions we chose to study have made considerable investments in developing teaching and learning systems that include a coherent approach to supporting teaching quality. All of them have also demonstrated considerable success on international indicators of educational quality that emphasize the kinds of higher-order skills needed in contemporary societies, such as OECD's Program for International Student Assessment (PISA). Further, most of these education systems include significant linguistic, cultural, and racial and ethnic diversity, and all of them have exhibited strong achievement and growing equity for

students who are lower income, immigrants, and members of long-standing minority groups.

For example, the populations of Australia and Canada include large numbers of immigrants (28% and 21%, respectively) (ABS, 2015; Statistics Canada, 2013), far more than in the United States (approximately 13%). They are also working to reduce achievement gaps for their significant aboriginal or First Nations populations and those living in rural or remote communities. Singapore is a multiethnic nation within which the three largest groups—Chinese, Tamil, and Malay—define three national languages that are explicitly preserved while English is taught in school. All students are supported to become bilingual English speakers. Other immigrants with a wide array of additional languages are also supported to preserve their mother tongue whenever possible while learning English and one of the other national languages.

Shanghai's Chinese population features many language dialects and groups of widely varying income and educational experiences, as is common throughout China. Roughly 20% of Shanghai's student population in grades 1 through 9 is composed of children of migrant families, reflecting a national trend of mass rural migration to the industrial centers of the nation (OECD, 2011, p. 96). And Finland, commonly thought of as a homogeneous country, has a growing number of immigrants, speaking more than 60 languages, with the largest number of children from Bosnia, Britain, China, Estonia, Germany, India, Iran, Iraq, Russia, Serbia, Somalia, Sweden, Turkey, Thailand, United States, and Vietnam (Statistics Finland, 2014b). In some urban schools, the number of immigrants and children with a home language other than Finnish is close to 50% (Sahlberg, 2007, p. 149).

All of these jurisdictions have high rates of educational attainment, with high school graduation rates generally exceeding 85% and college-going rates climbing rapidly. Recognizing that many factors other than schools influence educational achievement and attainment, including nations' investments in children's welfare, we note that student achievement in all of these jurisdictions exceeds the OECD average in reading, mathematics, and science as measured by the PISA (see Table 1–1). The PISA tests go beyond recall and recognition of information, emphasizing the ability of students to apply knowledge to new circumstances—the kind of competencies of increasing relevance to 21st-century learners.

In addition, these jurisdictions produce proportionately greater numbers of high achievers, shown here in Figure 1–2 by the proportions of students scoring at levels 4, 5, and 6 on PISA, reflecting a greater ability to solve complex problems.

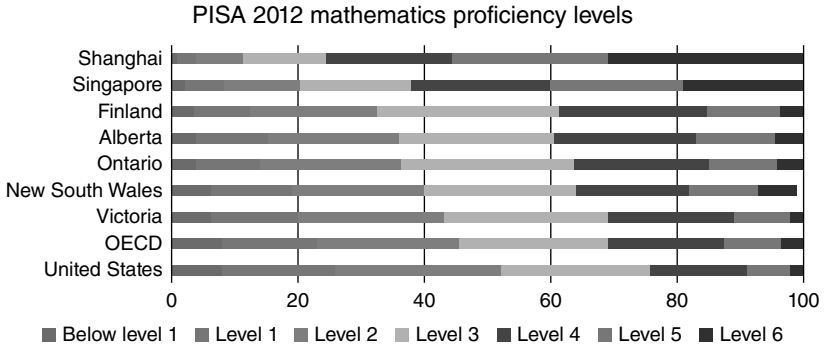
Table 1–1 PISA 2012 Mean Scores and Rank

Jurisdiction	Mathematics		Reading		Science	
	Rank	Mean Score	Rank	Mean Score	Rank	Mean Score
Shanghai	**1**	**613**	**1**	**570**	**1**	**580**
Singapore	2	573	3	542	3	551
Finland	**12**	**519**	**6**	**524**	**5**	**545**
Canada	13	518	9	523	10	525
Alberta		**517**		**525**		**539**
Ontario		**514**		**528**		**527**
Australia	19	504	14	512	16	521
Victoria		**501**		**517**		**518**
New South Wales		**509**		**513**		**526**
OECD		494		496		501
United States	**36**	**481**	**24**	**498**	**28**	**497**

Source: OECD (2014c). Used with permission.

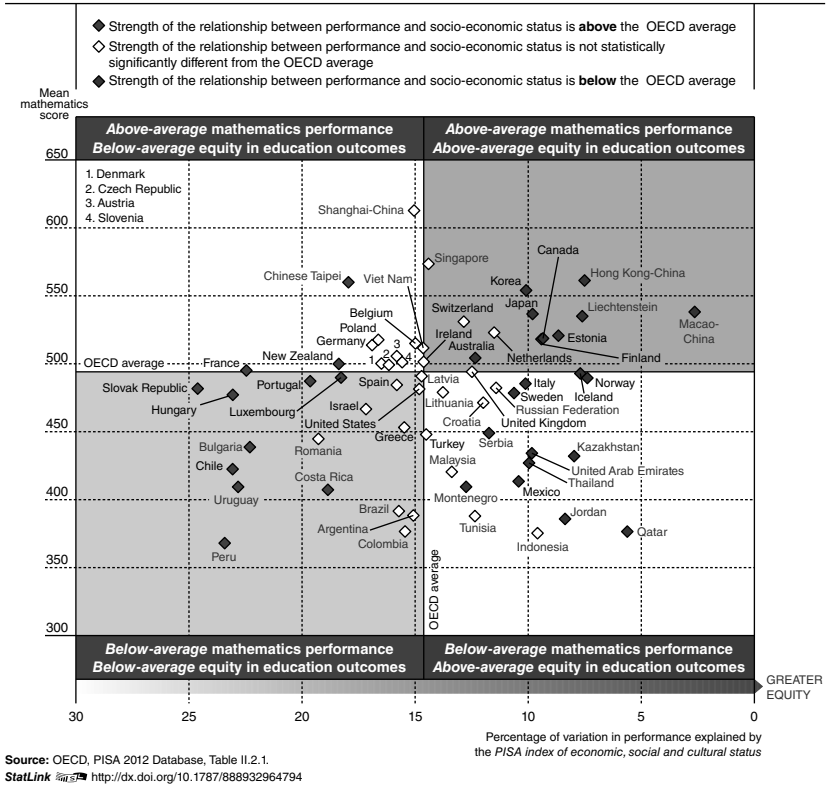
Equally important is the extent to which each jurisdiction provides equality of educational opportunity. A growing focus on equity is linked to an increasing recognition that for countries to compete in the context of greater economic and social globalization, all students—not just some—must have the necessary skills to be successful in the modern workplace and society (Tucker, 2011).

Figure 1–2 PISA 2012 Proficiency Levels



Source: OECD (2014c). Used with permission.

Figure 1–3 Relationship of Student Performance and Equity



Source: OECD, PISA 2012 Database, Table II.2.1.
StatLink http://dx.doi.org/10.1787/888932964794

Note: Percentage of variation of performance explained by the PISA index of economic, social, and cultural status.
Source: OECD (2013a). Table II.2.1. Used with permission.

One broad measure of equity is the relationship between socioeconomic status and achievement. A lower correlation signals greater equity, because socioeconomic status is less strongly related to student performance. As shown in Figure 1–3, our study jurisdictions are found primarily in the upper-right-hand quadrant, indicating both above average achievement and a greater-than-average equity quotient (measured by the impact of socioeconomic status on mathematics score).

In Finland, Canada, Singapore, and Australia, the proportion of variance in achievement explained by socioeconomic status of students was

Table 1–2 PISA 2012 Variation in Score Attributable to Socioeconomic Status

Jurisdiction	Proportion of Variance in Achievement Explained by Student Socioeconomic Status (%)
Finland	9.4
Canada	9.4
Alberta	8.9
Ontario	9.6
Australia	12.3
New South Wales	12.8
Victoria	9.0
Singapore	14.4
OECD	14.8
Shanghai	15.1

Source: OECD (2013a). Used with permission.

less than the OECD average (14.8%), whereas Shanghai's measure of equity was just above that average (15.1%)[1] (see Table 1–2). However, the performance of Shanghai's students was so high that the proportion of socioeconomically disadvantaged students scoring at the upper levels on PISA was still significantly higher than that of the entire population of most other jurisdictions. Put another way, the mean score of Shanghai's socioeconomically disadvantaged schools alone would still place it among the top five jurisdictions in the world (OECD, 2013a, p. 257).

We recognize that this relationship can be affected not only by the educational opportunities children experience but also by the extent to which there are wide economic disparities across households in a given jurisdiction: The greater the disparities in children's living conditions, the greater the effect of these disparities are expected to be, so educational access is a function of how schools provide educational opportunities and how children are supported by the society at large to take advantage of those opportunities.

What We Found

Although each country and province has a different history, culture, and context for education, we found many commonalities in how they approach policy making in support of quality teaching. A key goal in all of the jurisdictions was to develop a strong teaching profession, including

a commitment to "invest in knowledgeable practitioners who can make sound decisions about how to shape education for the specific clients they serve" (Darling-Hammond, 2009, p. 46).

A professional approach suggests that policy is directed toward the development of a teacher workforce that is highly educated and empowered to make decisions about teaching for the best interests of their students, based on knowledge accumulated from their training and from what they learn about the wisdom of practice from their in-service experiences and sharing of expertise with colleagues. It also suggests that teachers are accountable not only to students and parents but also to each other as professionals to maintain professional standards. Our findings reflect several themes common across these jurisdictions:

1. *A high social regard for teaching:* In virtually all of these jurisdictions, positive views of teaching reflected in public surveys and government statements are also reflected in compensation that is competitive with other professions requiring comparable education. In all of the jurisdictions, starting salaries for teachers are above international averages, and all have significant increases within the first 10 years of teaching. In some jurisdictions, teacher unions negotiate for salaries; in others, the government sets high salaries and raises them consistently without a negotiating process. In some cases, administrators and teachers belong to the same association (Singapore, Australia, and Alberta). In all jurisdictions, unions serve as a voice for the profession, partner with universities or government agencies in advocating for and implementing professional standards, and help shape professional learning opportunities.

2. *Selectivity into the profession:* This high status enables teaching, as a rule, to be selective. Some jurisdictions exert a high bar at initial entry with rigorous selection of candidates into teacher training, others emphasize selective graduation and hiring policies, and some use a blend of the two. The criteria for selecting teachers into the profession include a strong capacity for working with children and appropriate professional dispositions, often including a demonstration of research and pedagogical skills, along with academic ability.

3. *Financial support for preparation and professional learning:* In all of the jurisdictions, preparation is free or substantially subsidized for teacher candidates so that most or all of the costs are covered. In some, candidates also earn a salary or stipend while undergoing preparation. In addition, government support is available for ongoing professional development. As a result, rather than acquiring only as much training as they can afford, teachers typically have ready access to high-quality

learning opportunities and schools can expect them to enter with substantial expertise that they continue to expand.

4. *Professional standards that outline teaching:* Professional standards outlining teaching competencies undergird preparation, professional licensure or registration, professional development, and appraisal in each jurisdiction. These common expectations are focused not only on technical knowledge and skills with respect to content and pedagogy but also on dispositions for learning and collaborating to serve students well. The vision of teaching and learning embedded in these standards is one that values the whole child and his or her development across physical, social, emotional, physical, and moral domains—anticipating that the teacher's role is to support this development. The establishment of such standards as a means to organize professional expectations and learning has been advancing rapidly around the globe and had occurred in various ways in each of our jurisdictions. In addition, among the nations we studied, those without a current system for teacher registration, accreditation, or licensure were actively exploring a means to assess and certify teachers as ready for practice.

5. *Preparation and induction grounded in well-defined curriculum content and well-supported clinical training:* All of the jurisdictions offer thoughtful curriculum guidance (national in small countries and state or provincial in larger ones) that has shaped the learning of teachers as students themselves and that shapes their learning and practice once they enter the profession. In every jurisdiction, these curricula have been recently revised to better reflect 21st-century skills and competencies for students. The curricula for initial teacher education typically focus on content pedagogy tied to the national or state curriculum, as well as an understanding of learning and child development. Teachers receive strong content preparation for the areas they will teach and increasingly strong preparation for teaching diverse learners—including students with special needs and new immigrants.

We also found an increasingly intense focus on extended *clinical training* for teacher candidates. Finland has long trained teachers in model schools connected to the university in master's programs. Today, virtually all of the other jurisdictions are developing or expanding school-university partnerships to provide clinical training that bridges theory and practice, and several are expanding the reach of graduate-level preparation. In Finland, Canada, and Australia, the most extensive clinical supervision typically takes place during initial teacher education, even

as support is extended into the first year of teaching through mentoring or induction programs. In Singapore and Shanghai, beyond the student teaching teachers undertake during their preservice preparation, they receive even more intensive mentoring when they begin their careers from trained senior teachers, using the advantage of a reduced workload to engage in collaborative planning and coaching with veterans as well as seminars to deepen their practice.

6. *Teaching as a research-informed and research-engaged profession:* Teacher education and professional development in these jurisdictions are typically based on—and further encourage—research about student and teacher learning. In many cases, strategies such as Finland's model schools; Singapore's and Shanghai's use of lesson study, action research, and other teacher inquiry approaches; or Canada's leadership grants to teachers have sparked new lines of research about teacher development. In addition, the training that new teachers receive is increasingly designed to help them both use research and become researchers about classroom practice—with their work often published for other teachers' and researchers' use. As a consequence, teaching practice itself is becoming more research-engaged and deliberately reflective, with teachers conducting inquiries and action research with colleagues to meet specific teaching challenges. The collection and use of evidence to inform teaching practice is further supported by professional teaching standards and the design of professional development.

7. *Teaching as a collaborative, not isolated, occupation:* Teaching in the countries we studied is viewed as a team sport, not an individual act of courage. Teachers are expected to plan and problem-solve collaboratively, and they are generally afforded time to do so. Teaching practice is "de-privatized" with opportunities for teachers to observe others' classes, be observed, and mentor others. In this way, teacher knowledge and expertise are valued. In most cases, teaching as collaborative professional engagement is explicitly articulated in teaching standards and policy documents that set expectations for the work of teachers, and expectations for contributing to the learning of colleagues are often part of the teacher appraisal process. Beyond teacher sharing within schools, most jurisdictions also sought to foster teacher collaboration across schools to extend quality practices system-wide. This often takes the form of school networks (or pairings) for professional learning. Teachers and principals share expertise within these networks. Some jurisdictions also sponsor subject matter networks or other topical groups that are engaged in professional learning together.

8. *Teacher development as a continuum:* Each of the jurisdictions treats teacher professional learning as a continuum toward ever more effective work in support of student learning and, over time, toward the learning of colleagues as well. Collaboration with colleagues as well as commitment to ongoing learning are key aspects of the evaluation processes used in these jurisdictions, and they are means for identifying teachers as leaders. Teacher evaluation processes are connected to teacher growth and development rather than punitive accountability. And because entry and early induction are so well supported, there is no expectation that eliminating incompetence is a major goal of evaluation. Teaching is regarded as a learning profession, with opportunities for even senior teachers to continually learn new skills and increase their knowledge.

9. *Opportunities for leadership:* There are efforts in every jurisdiction to develop teacher leadership. In a growing number of countries (Singapore, China, and more recently Australia and Canada), teaching and leadership standards articulate knowledge and skill expectations at different career stages, laying out an ongoing pathway for learning with supported paths to leadership across the span of the career. In Singapore and Shanghai, there are highly developed career ladders, with opportunities to become a senior, master, or mentor teacher or a principal or administrator. In Singapore, yet another career track prepares and enlists teachers as specialists in curriculum, applied psychology in education, and educational research, evaluation, and measurement. Australia is developing a similar career ladder system, and teachers in Finland and Canada have opportunities to engage in research, mentoring, curriculum leadership, and school improvement activities as part of their role. In Ontario, a pathway to teacher and administrative leadership has been developed and extensive support for teacher research has been provided. In Finland, teacher leaders have prominent roles in teacher education and research. Each jurisdiction has formal or informal opportunities for teachers to develop pedagogical innovations and participate in school decision making.

10. *Systems organized to support quality teaching and equity:* All of the jurisdictions we studied developed systemic supports for quality teaching that provide an infrastructure to support the work of the individuals in the profession. The availability of national or state curriculum, in each case designed by members of the profession, provides a centerpiece for teachers' work and collaborative planning. This curriculum guidance is generally lean, offering a road map for teachers to meet the needs of their students, not a straitjacket. Stable systems of mentoring and professional

learning with reliable funding are part of this infrastructure, along with scheduled in-school and professional development time, which enable higher-quality teaching across the board with greater equity in learning as a result. Jurisdictions share a focus on fiscal and social justice with equitable funding and a conscious focus on traditionally underserved communities in their funding schemes, teaching standards, and professional development emphases.

Developing Both *Teacher* Quality and *Teaching* Quality

These jurisdictions recognize that, in building a system, it is important not only to develop skills on the part of individual practitioners but also to create the conditions under which practitioners can use their skills appropriately. Thus, they attend to *teacher* quality and *teaching* quality. *Teacher quality* might be thought of as the bundle of personal traits, skills, and understandings an individual brings to teaching, including dispositions to behave in certain ways, including attributes such as the following:

- Strong content knowledge related to what is to be taught
- Knowledge of how to teach others in that area (content pedagogy) and skill in implementing productive teaching practices
- Understanding of learners and their development, including how to support students who have learning differences or difficulties and how to support the learning of language and content for those who are not already proficient in the language of instruction
- General abilities to organize and explain ideas, observe and think diagnostically, and use adaptive expertise to make judgments about what is likely to work in a given context in response to students' needs (For a summary of studies, see Darling-Hammond, 2000; Darling-Hammond & Bransford, 2005; Wilson, Floden, & Ferrini-Mundy, 2001.)

Most educators, parents, and policy makers would also include important dispositions in this list, such as the willingness to

- Support learning for all students
- Teach in a fair and unbiased manner
- Adapt instruction to help students succeed
- Strive to continue to learn and improve
- Collaborate with other professionals and parents in the service of individual students and the school as a whole

Teaching quality, as distinct from teacher quality, refers to strong instruction that enables a wide range of students to learn. Such instruction meets the demands of the discipline, the goals of instruction, and the needs of students in a particular context. Teaching quality is in part a function of teacher quality—teachers' knowledge, skills, and dispositions—but it is also strongly influenced by the context of instruction, including factors external to what the teacher brings. Key to considerations of context are the curriculum and assessment systems that support teachers' work, the opportunities to learn from and work with colleagues, the fit between teachers' qualifications and what they are asked to teach, and teaching conditions. An excellent teacher may not be able to offer high-quality instruction in a context where he or she is asked to teach a flawed curriculum or lacks appropriate materials. Similarly, a well-prepared teacher may perform poorly when asked to teach outside the field of his or her preparation or under poor teaching conditions—for example, without adequate teaching materials, in substandard space, with too little time, or with classes that are far too large. Conversely, a less-skilled teacher may be buoyed up by excellent materials, strong peer support for lesson planning, and additional specialists who work with students who may, for example, need extra help to learn to read.

Even when teachers have equivalent skills, there is little doubt that the quality of instruction experienced by students is greater in a school with high-quality and plentiful books, materials, and computers; a coherent, well-designed curriculum that teachers have built together; a team of teachers working in tandem on similar norms and practices, paying attention to students' needs; and adequate facilities and resources than it is when they must learn in overcrowded, unsafe conditions with insufficient materials, poorly chosen curriculum, teachers struggling in isolation from one another, and no instructional supports.

These jurisdictions have understood that strong teacher quality may heighten the probability of effective teaching, but it does not guarantee it. Initiatives to develop teaching quality and effectiveness must consider not only how to identify, reward, and use individual teachers' skills and abilities but also how to develop teaching contexts that enable good practice. The teaching and learning systems they have developed acknowledge that, if teaching is to be effective, the policies that construct the learning environment and the teaching context must be addressed along with the qualities of individual teachers.

Organization of This Book

We articulate and elaborate each of these themes in the remainder of this book. We begin in Chapter 2 with an analysis of the ways in which education is organized and supported in each of the five countries in our study. We describe the education context within which these policies sit, including the funding arrangements and governance structures in each country. We discuss how each jurisdiction takes an integrated approach to curriculum, instruction, and assessment policy that creates a teaching and learning system. The chapter also outlines the broader context in which policy making occurs, including the major educational challenges and debates raised in each jurisdiction.

Chapter 3 looks at entry into the career, examining specific strategies for educator recruitment, preparation, and early induction into the field. Our discussion addresses how each jurisdiction attracts high-quality individuals into teaching and employs strategies to distribute them equitably and address potential areas of teacher shortages. It then looks at initial teacher education programs and how these are increasingly influenced by a foundation of professional teaching standards. The chapter also describes the ways in which teachers are inducted into the profession, receiving mentorship to extend and guide their early career learning.

The focus of Chapter 4 is the way each jurisdiction approaches teacher professional learning and developing teacher knowledge. The kind of professional learning undertaken is often linked to state or national teaching standards and tied to student learning and school improvement. We discuss the range of professional learning strategies available, including time for professional collaboration, coaching, and mentoring, and the role of government in providing for or supporting teacher learning. We also outline the various approaches to teacher feedback and appraisal and the ways in which these are linked to teachers' professional development.

In Chapter 5, we look at how each jurisdiction structures careers in teaching and develops teacher and administrative leadership. We look at the range of supports available for leadership development and how these leaders become part of the human capital for the teaching and learning system.

Chapter 6 examines how these jurisdictions structure broader education improvement initiatives and organize their systems to promote equity in access to high-quality teaching.

Chapter 7 zooms back out to look at the development of education policy internationally. It discusses where the countries have been evolving and learning from global exemplars, where they see challenges, and how they are viewing and acting on the next horizons for improvement in their own settings. We conclude by summarizing lessons that might be drawn from this research about what matters and what works in developing strong teaching, as well as principles that emerge from policy systems that enable high-quality teaching.

Creating an effective system of policies to support teaching quality can have transformative potential. In just 50 years, for example, countries such as Finland and Singapore have vaulted to among the top-performing educational systems, despite the fact that each had a very underdeveloped and inequitable education system those decades ago, with among the lowest rates of educational attainment in their regions. Although they have very different populations, histories, and social and economic challenges, what they have in common is a policy vision grounded in an ethic of equity and a belief in the power of a professional and effective teaching force. This has helped produce teaching environments similar to that of Kranji Secondary School: a commitment to collaboration and continual improvement. As Singapore's former prime minister Goh Chok Tong noted in a speech announcing his "Thinking Schools, Learning Nation" initiative:

> [This initiative] will redefine the role of teachers . . . Every school must be a model learning organization. Teachers and principals will constantly look out for new ideas and practices, and continuously refresh their own knowledge. Teaching will itself be a learning profession, like any other knowledge-based profession of the future. (Goh, 1997)

NOTE

1. A well-publicized criticism of Shanghai's outcomes with regard to equity is that the proportion of migrant students in PISA (at age 15) is not representative of the number of migrant students at all age ranges and may also exclude migrant students in schools outside the public system. Migrant students are more likely to come from less affluent backgrounds and have access to fewer educational resources. We discuss these issues in later chapters.