Teacher Policies: Global Best Practices for Developing the Teaching Profession

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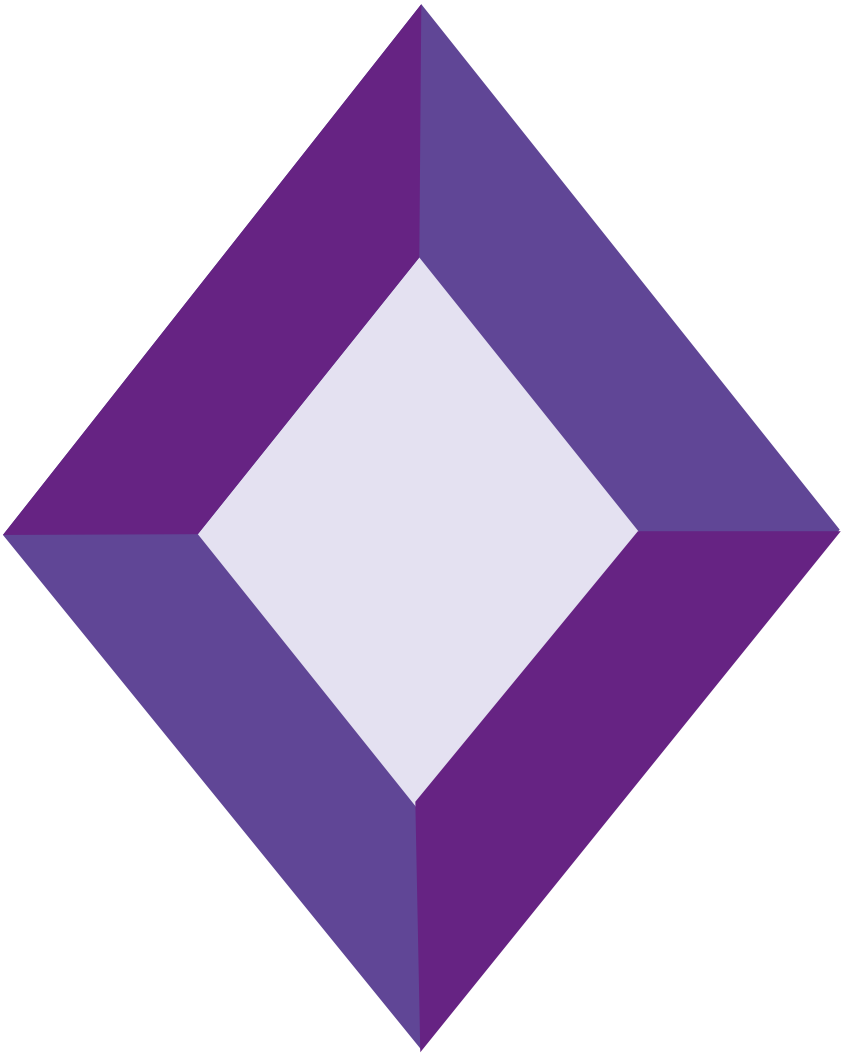

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FOREWORD

Education is arguably the most important national investment over the long-term. Quality education impacts nation building, and society's capacity to adapt, create value, and innovate. Education is key to human flourishing, the celebration of our cultural roots and values, the appreciation of diversity, and the preservation of peace and harmony. Current evidence indicates that teacher quality is a major anchoring factor in the success of education performance across the globe. Today, there are more than 60 million teachers globally, making teaching arguably among the world's largest professions, and one that has played an enduring, important role in every human society through history. Teacher quality has a significant, unquestioned impact on student learning and achievement which, in turn, directly affects workforce capabilities and broader socio-economic development. In short, the "teacher factor" is a key catalytic force for progress across all dimensions of development.

At the same time, the complexities of the twenty-first century, with the promises and potential perils of globalization and the exponential growth of disruptive technologies, have challenged basic ideas of what makes an "effective teacher". Yet these complexities have also created unanticipated opportunities for learning to be enhanced, amplified and democratized. Teachers, who have often been isolated in their classrooms, can now become active participants in shaping the future of education through innovation.

Short-termism, a problem in every aspect of global policy – from financial markets to environmental regulation – also persists in teacher policy. Overreliance on a narrow set of measures of student achievement have often stunted the development of pedagogy and have worked against a holistic and long-haul view of education in which teachers take responsibility for shaping learning environments. Against this backdrop arise a host of questions which we seek to explore in this report. How do we attract and recruit the right talent? What are the best ways to train, compensate, and recognize teachers? How do we facilitate continuous professional development, effective performance management and evaluation? How should policymakers best construct career tracks that ensure high retention and job fit, while creating a sense of professional identity for teachers as a whole?

Old ways of thinking that dominate current policymaking as well as an outmoded social discourse may need to be discarded.

Educators need to take an innovative and creative approach to developing teaching practice and to designing learning. What are some new paradigms and rules of engagement? How do we balance didactics and inquiry approaches? How do we best tap technology for collective and independent learning and "ubiquitous" learning in our deeply connected and information rich environments? How can we align learning with problem-solving skills, entrepreneurial thinking and work life competencies?

Teachers in all societies are subject to multiple demands from students, parents and bureaucracies. They are often blamed for a range of outcomes in which they may play only a minor role. Raising the status of the teaching profession will contribute substantially to quality learning and effective education systems.

Thankfully, there is a mounting body of evidence that provides much hope and guidance for improving teacher policies. This report draws and builds on evolving research to synthesize global data on teacher policies and best practices from some the world's top performing systems. While comprehensive, the synthesis is intended to be accessible and practical rather than academic. It is hoped that the recommendations provided in this report will serve as a useful reference and resource for policymakers and education leaders to advance the teaching profession, and ultimately, the learning experiences of future generations everywhere.

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EXECUTIVE SUMMARY

Teacher policies are key to improving teacher quality, which in turn impacts student outcomes. Many education systems grapple with the issues of recruitment, teacher preparation, performance management, teacher development and empowerment.

Based on our examination of academic literature and international reports, the current discourse on teacher policies can be meaningfully categorized under ten key areas, which reflect every important aspect of a teacher's career. In this report we discuss these areas and related strategies for achieving optimal policies. We also survey various established and emerging high-performing systems in Finland, Singapore, Ontario, Shanghai, Hong Kong, Massachusetts, California, South Korea, New Zealand, and Qatar, to discover how these systems effectively implement teacher policy strategies. A snapshot of our key insights and recommended strategies follows.

1 • RECRUITMENT OF QUALITY CANDIDATES

The ideal teacher is one with a right balance of aptitude and attitude. To identify teachers with the ideal profile, selection processes should encompass multi-pronged approaches, and maintain a high degree of rigor in selection standards. Global best practices typically involve a combination of at least a few clusters of tools, including: (a) academic performance and/or an entrance proficiency test, (b) classroom simulations, (c) interviews with experienced panels, (d) prior teaching experience and/or (e) vocational fit assessments.

For example, Finland's teacher education programs are known to be extremely selective and rigorous, including a nationally-administered standardized entrance examination at the first stage of selection, coupled with a second stage requiring interviews and personality testing (depending on the institution offering the program). While there is no one-size-fits-all formula for getting the ideal teacher, broadening the range of tools used in selection will tend to be more effective rather than depending on any single metric.

2 • COMPENSATION AND INCENTIVES

Policy makers need to understand the reasons why people may or may not be attracted to teaching, which include altruistic, intrinsic and extrinsic factors. Negative perceptions of teaching relating to starting salaries, professional image, working environment and career prospects need to be actively addressed. Ensuring competitive salaries for teachers is essential and policymakers should benchmark salaries appropriately. However, raising salaries above the market average does not necessarily lead to substantial increases in quality. Many top performing systems provide competitive salaries but make room for the best to progress towards higher salary scales through built-in merit increments. Many top-performing countries also employ a range of related incentives such as performance and retention bonuses, additional pay for extra duties taken, and leave for professional and personal growth.

For example, Ontario provides funding for teacher candidates who enrol in pre-service programs. Compensation for teaching professionals increases over the course of their careers along with experience, qualifications and performance. This is guided through a salary grid which provides for ten years of experience and four qualification categories. As with other systems, teachers are also provided allowances for taking on other duties. A number of countries such as Shanghai,

Korea and Singapore offer annual performance bonuses. Some of these systems also provide non-financial incentives for retaining teachers, such as subsidizing further education and providing sabbatical opportunities for longer-serving teachers.

3 • INITIAL TEACHER PREPARATION AND ACCREDITATION STANDARDS

A quality initial teacher education (ITE) program is critical to ensuring effective teacher preparation. The best ITE programs are holistic, and include both general and specialized content knowledge training, with a substantial focus on research-informed pedagogy. They also integrate theory and practice effectively, and facilitate the growth of strong learning communities. Furthermore, they incorporate mentoring and feedback mechanisms, for example, through graduated practicum programs and formal mentor-mentee relationships. The best systems also ensure high standards of teaching by active alignment with national professional standards and rigorous accreditation.

For example, Singapore and Finland have exemplary ITE programs. Finland is well-known for having high qualification standards (a Master's degree requirement for teaching in primary to upper secondary levels) and a longer preparation process of about five years, with one year of practicum training. In Singapore, the preparation process is about two to four years, with a substantial period of practicum ranging from ten to 20 weeks (depending on the type of program). In both Singapore and Finland, mentoring structures are put in place, for example through the formal supervision of practicum experiences. Both countries' ITE programs also focus on a mix of content, pedagogy and soft skills as part of the curricula.

4 • CAREER DEVELOPMENT STRUCTURES

Education is becoming an increasingly complex enterprise and sophisticated expertise is needed in pedagogy, curriculum development, and leadership of educational units. There is a need to facilitate the creation of career tracks to provide opportunities for career progression and talent allocation. For example, different tracks should be carved out for teachers with passion to work in the classroom, teachers with interest to work on content and curriculum specialization, and teachers with the aspiration and capacity for school leadership. Clearer professional pathways also signal professional authority and autonomy amongst teaching professionals.

While some countries leave career planning and pathways to emerge more organically, New Zealand and Singapore have in recent years taken the initiative to carve out clearer career tracks for their teaching professionals. Singapore has developed a Teaching Track (for those focussed on classroom teaching excellence), a Leadership Track (for those called to school leadership and administration), and a Specialist Track (for those inclined to develop pedagogy or conduct deeper education research). New Zealand has also implemented unique roles in recent years, for example, for Expert Teachers, Lead Teachers, Executive Principals and Change Principals, with a view towards improving standards of teaching in lower-performing schools. School management has also been delegated to a range of middle-level teaching professionals to increase efficacy and professional autonomy.

5 • PROFESSIONAL DEVELOPMENT AND CONTINUOUS LEARNING

It is imperative that teachers consistently and continuously keep up-to-date with new knowledge, skills and teaching practices. School leaders need to provide support in terms of time and resources to meet the needs of teachers at different stages of their careers. Optimal professional development goes beyond workshops and courses. It includes school-embedded professional development, sophisticated induction and mentoring, collaborative teacher networks and project-based research to improve teaching practices and learning outcomes.

Shanghai and Hong Kong both offer a range of professional development tools to meet the needs of their teachers. Shanghai's model is famous for comprehensive induction and mentoring programs at all levels of seniority, where junior teachers are mentored by senior teachers, and the latter by subject leaders and master teachers. Study groups meet up to discuss lesson plans, while research groups undertake projects to improve student learning. Hong Kong also encourages teachers and schools to set aside a substantial portion of time for professional development, and includes a range of professional development activities representative of those available in most top-performing systems, from structured learning at professional seminars and workshops, to offshore study visits, postgraduate study, professional collaboration and sharing, mentoring, action learning, and research-based projects.

6 • ACCOUNTABILITY, PERFORMANCE MANAGEMENT AND EVALUATION

Teacher evaluation should focus on both teacher development and accountability. A pragmatic and multi-faceted approach is recommended. Common tools for evaluation include classroom observations by peers and senior teachers, interviews/dialogue sessions, keeping a portfolio, individual goal-setting and self-evaluation, and broader evidence of student learning and development. At the same time, pragmatism calls for an appreciation of the resource costs of implementing sophisticated evaluation tools, and calibrating these tools to each school's context.

California, Massachusetts and Singapore offer useful examples of effective teacher evaluation using a suite of tools. In the Long Beach, California model, evaluation takes place against a clear set of standards (the California Standards for the Teaching Profession) which articulate concrete competencies for benchmarking teacher performance. Schools in Massachusetts tend to use multiple measures of evaluation including classroom observation, data on student learning, and feedback from various stakeholders. Singapore's Enhanced Performance Management System (EPMS) offers another learning point with its innovative creation of an integrated system which tracks and documents the annual cycle of self-assessment, mid-year review and final evaluation between junior teachers and school leaders. These three case studies highlight important aspects of effective evaluation: standard-setting, multiple measures of assessment, and continuous feedback which is tracked both for a teacher's own benefit and to gauge development over time.

7 • SCHOOL LEADERSHIP

School leadership plays a critical role in transforming the environment in which teachers and learners function. Top performing systems pay more attention to the selection of school leaders, promote effective leadership practices and the development of leadership capacity. Proactive approaches and succession planning is essential. Those with leadership aptitude should be given leadership roles progressively, and programs should be developed to promote research-based and instructional leadership practices. Leaders should be trained to handle policy implementation, nurture professional involvement and development, and practise effective public engagement.

For example, since 2008, Ontario has had in place the Ontario Leadership Strategy (OLS) which systemically seeks to attract and develop quality school leaders. Rigorous training for principalship positions is required through the Principals' Qualification Program. A basic level of experience and advanced qualifications are required before prospective candidates can apply to school leadership positions. Continuous mentoring, evaluation, feedback and succession planning are involved in the grooming of future school leaders.

8 • TEACHER SYMBOLISM

Our vision of teachers must go beyond their being mere communicators of content, and must also encompass their roles as leaders in pedagogical thinking, as inspirational role models, respected domain experts and custodians of societal values. Key policy factors in enhancing teacher symbolism include (i) building on cultural regard for teachers, (ii) making space for professional autonomy and trust, (iii) publicizing quality-driven recruitment, selection criteria and training, (iv) managing workloads and the general working environment, (v) giving national recognition for the accomplishments of teaching professionals, and (vi) utilizing branding and marketing campaigns which raise the attractiveness of the profession.

South Korea and Qatar provide interesting examples of countries where teaching is looked upon favourably. South Korea's experience is well-established with its cultural esteem for the teaching profession, bolstered by stringent entry requirements which raise public perception of the quality of individuals entering teaching, and a degree of professional autonomy which also attracts people to the teaching force. Qatar's recent experience with Teacher For Qatar (TFQ) also shows that it is possible to stimulate interest in the teaching profession and cultivate a higher quality of candidates through selective recruitment focussing on those with the right attitude and aptitude for teaching.

9 • POLICY INTEGRATION, ALIGNMENT AND COHERENCE

The whole is more than the sum of its parts when it comes to effective policy implementation. Effective education systems have a "big-picture" perspective and coordinate policies with a view to longer-term impact. Key policy strategies include (i) governance structures that ensure congruence of goals, alignment of activities and optimization of resources, (ii) ensuring

collaboration among all stakeholders, and (iii) the presence of mediating layers and networks for facilitating implementation.

In Singapore and Ontario, stakeholders work closely together to ensure the effective implementation of teacher policies. Singapore's efficacy is aided by having important institutions guiding the creation and execution of policies, including the national Ministry of Education, the National Institute of Education, schools and professional bodies such as the Academy of Singapore Teachers. The approach taken by these institutions focuses on being holistic and collaborative, with a common vision being the driving force. Ontario is another useful example. While involving a different matrix of stakeholders (for example a number of teacher unions) and various layers of dispersed school districts, it has facilitated the implementation of well-aligned education policies by likewise focussing on communication and collaboration among all stakeholders.

10 • FUTURE ORIENTATIONS: TEACHING ROLES IN THE TWENTY-FIRST CENTURY

In a rapidly changing world, teachers need to be cognizant of the changing nature of knowledge, learning and environments. There is a need to equip teachers with new roles such as being facilitators of learning and designers of the learning environment. Teachers need to embrace new pedagogies and transform pedagogical practices, for example, to account for new ways in which learners absorb information through technology and social media. Teachers must appreciate their role in cultivating twenty-first century competencies including problem solving, critical thinking, collaboration, creativity, and interpersonal skills. Teachers also play a critical role in helping students build character and inculcate values.

Singapore's Ministry of Education recognizes the importance of envisioning the changing role of teachers. Its twenty-first century competencies framework (21CC) articulates an extended role for the teacher as one with an enhanced sense of identity and mission directed towards students, colleagues and the wider community. In terms of pedagogy, Singapore's National Institute of Education harnesses social media and new technologies to suit the changing learning environment for teachers, which includes both the digital world and the traditional classroom.

While the case studies highlighted (and discussed in detail below) provide useful and current examples to draw upon, each education

system must be alive to its own stage of development and resource constraints. Systems at earlier stages of development may focus on different types of strategies — for example, more on the basic level of competencies cultivated in pre-service training, rather than the more advanced type of training involved in continuous professional development. The ten strategies discussed should also be viewed holistically rather than in isolation. The first five — Recruitment of Quality Candidates, Compensation and Incentives, Initial Teacher Preparation and Accreditation Standards, Career Development Structures and Professional Development and Continuous Learning – are the basic "micro" layer of strategies targeted at individual teacher development. The next five strategies — Accountability, Performance Management and Evaluation, School Leadership, Teacher Symbolism, Policy Integration, Alignment and Coherence, and Future Orientations: Teaching Roles in the Twenty-First Century — form the "macro" layer which is no less important as the supporting structure for implementing effective teacher policies in the long term. In the final analysis, it is important for all systems to consider their present approaches to each of these ten areas, and recognize areas for further progress in the future.

THE IMPORTANCE OF TEACHER POLICIES

INTRODUCTION

THE IMPORTANCE OF TEACHER POLICIES

The unprecedented pace of change in the twenty-first century globalized world calls for wide-ranging reforms in educational strategies, systems, and practices. The people at the frontline of these challenges include our teachers, who are tasked with preparing the next generation to cope in a fast-changing world. There is increased competition for talent from all sectors of the economy and, as such, the education service must also do more to attract a good proportion of talented and committed people in order to propel individual nations forward towards their economic goals and desired social outcomes.

The teacher factor has been variously described as being the "most important variable", the "main driver" and the factor that "trumps all others" in explaining the forces shaping student learning and achievement. Teacher quality plays an anchoring role in ensuring high student outcomes and enabling students to grasp the basic competencies needed before they enter the working world. At the same time, many factors contribute to the quality of overall learning, including the home environment, socio-economic status, the availability of external tutoring, class and school size, as well as wider socio-cultural attitudes towards schooling and educational achievement. A recent 2015 study on Finland indicates that other factors beyond teacher quality have a role to play in explaining high performance on international standardized tests such as the Program for International Student Assessment (PISA) by students around the world.

It cannot be denied, however, that teachers and teaching quality are of paramount importance. Where socio-economic status or external tutoring can explain particular students' achievements (or the lack thereof), teachers are the great levellers in an inequitable playing field. Where class size is above average, a well-trained and dedicated teacher can go the extra mile in spotting a student who lags behind because of learning difficulties. The teacher factor, unlike other systemic factors, is different – because it is the human factor. Moreover, teachers play vital roles not only in ensuring strong academic foundations in fundamental literacies such as verbal and quantitative skills and reasoning abilities, but in inspiring, motivating, mentoring and facilitating every student's

search for knowledge. Teachers are also key players in anchoring the ethos and values of society. In a very real and tangible way, teachers are – for better or worse – the role models students look up to, given that they are the adults with whom children and teenagers spend a large part of their lives with outside of the family context.

Given the importance of the teacher factor, sufficient time and resources must be directed towards refining our teacher policies to drive a constantly improving education system. It has become imperative that governments invest in resources to attract, retain and develop talented people for the teaching profession. We need policies to attract the best people, maximize their potential and empower them to reach their personal best as teachers. The remaining sections dissect key aspects of teacher policies using international comparisons and global best practices. Our aim is to ensure that every education system can take away lessons for reflection and implementation in enhancing their own teacher policies.

#1

TEACHER POLICIES: GLOBAL BEST PRACTICES AND CASE STUDIES

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1 • RECRUITMENT OF QUALITY CANDIDATES

Identifying the ideal teacher

What is the profile of an ideal teacher? While there are many studies over the last decade attempting to identify the attributes of ideal teachers,[1] they essentially point to a balance of teaching aptitude and attitude – a formula that remains constant across countries and student profiles, as Fraenkel points out in an early study of effective teachers in the United States, Australia, Germany, Korea, New Zealand and Poland.[2]

The importance of aptitude: The competencies sought in an ideal teacher can be boiled down to the following intersecting areas of knowledge found in many statements of teaching standards, as noted by the US National Academy Committee on Teacher Education:[3]

- Understanding of curriculum content and goals, including the subject matter expertise and skills to be taught in light of disciplinary demands, student needs, and the social purposes of education;

- Knowledge of learners and how they learn and develop within diverse social contexts, from those with special needs to the gifted; and

- Understanding of and skills for teaching and effective communication to various learners.

In this regard, this importance of subject-matter competence cannot be underestimated. Surveys of both students and teachers show that all key stakeholders recognize the fundamental necessity of subject mastery for effective teaching.[4] Furthermore, various studies have found a significant association between teachers' academic

major and their students' scores, especially in mathematics and the sciences.[5]

The importance of attitude: Teaching potential is necessary but insufficient. A 2010 Scottish report, "Teaching Scotland's Future: Report of a review of teacher education in Scotland"[6] highlighted, among other things, the following qualities and skills of twenty-first century teachers:[7]

- Reflectiveness;
- Commitment to teaching as a vocation and the development and learning of each child;
- Passion for learning and deep understanding of and enthusiasm for the subject-matter;
- Willingness to share ideas and network with colleagues; and
- Keenness to participate in personal learning and development.

Striking the right balance: The above-mentioned qualities relate to the ideal teacher's professional attitude which, coupled with the right aptitude, constitute the make-up of the ideal teacher. To put it in the language of the current discourse, the ideal teacher must encompass various layers of professionalism: going beyond the basic paradigm of the "effective" teacher, to encompass the "reflective" teacher, the "enquiring" teacher and the "transformative" teacher as well.[8] The complex and intricate interaction of these knowledge bases and qualities would lead to an increase in the overall quality of teaching.[9]

Designing the selection process

Creating selection processes to identify ideal teacher potential: Identifying the ideal teacher is but the first step in recruitment. At the level of implementation, the selection process itself must be designed "not only [to] recruit able candidates, but... also screen them carefully to ensure that they have the attributes that make teachers effective – including commitment to the profession and evidence of the capacity to work well with children, as well as academic ability."[10] In essence, at the screening stage where candidates apply to a teacher education program, the centralized regulatory body or teaching education institution in charge of admitting teacher candidates must design the process such that it goes beyond looking at academic

performance to include other indicia of teaching aptitude and attitude.

Comparative overview of admission processes: The content of admission processes varies widely across countries, with some basing admission to initial teacher education primarily on examination grades (i.e. no different from general entrance requirements to tertiary education), while others take into account specific selection criteria with a view to identifying teaching attitude and aptitude. For example, the 2013 Eurydice report "Key Data on Teachers and School Leaders in Europe" identified a great diversity within European admission processes, noting that only a third of all European countries have specific selection criteria (such as satisfactory performance in a specific test). These processes are usually applied at the program provider's discretion (Denmark, Portugal, Romania, Finland and Slovakia), though they may be determined by the education authority in some cases (Scotland, Lithuania and Italy) or by the education authority stipulating a set of minimum criteria which program providers may add to.

Global best practices: We have identified certain processes across high-performing countries globally. While these are by no means uniform, they give a flavor of what has worked with some measure of effectiveness to sieve out candidates with teaching attitude and aptitude. These include: i) academic performance; ii) entrance proficiency tests on basic proficiencies (such as numeracy or literacy); iii) entrance proficiency tests for subject-matter expertise (which may take different forms, e.g. a physical education test or music audition); iv) written tests on pedagogy; v) observed classroom simulations to determine aptitude for classroom management; vi) interviews to determine attitude and suitability for teaching; vii) psychological or personality assessments to determine vocational fit, viii) prior teaching experience; ix) other relevant professional experience, and x) written applications (including personal statements and CVs). The success rate of applicants also gives an indication of the competitiveness and selectivity of a teacher education program, which is suggestive of its quality as well.

Examples across countries: The following table provides a selected global survey of how different countries have applied the above-mentioned criteria:[11]

Table 1: Admission into teacher education programs

Factors considered	Examples across countries
Academic performance of admitted candidates	• Finland: Top 10% of high school cohort • South Korea: Top 5% of high school cohort (for elementary school teachers) • Singapore: Top third of high school cohort • Hong Kong: Top 30% of high school cohort (naturally selective as only about 18% of students go on to university) • USA: About 23% from top third of high school students; overall from top quarter of high school students • Canada: Majority from the top 30% of college cohort
Entrance proficiency test on basic proficiencies (e.g. numeracy and literacy)	• Finland: Multiple choice examination to test literacy, numeracy and problem-solving skills • Singapore: Required for applicants whose English language examination results at Ordinary or Advanced levels fall below stipulated minimum scores • Australia: Not uniform, practiced at some teacher training institutes, e.g. via the University of Melbourne Teacher Selector tool • Netherlands: Test of Dutch language and numeracy skills required for primary school teacher education
Entrance proficiency test for subject-matter expertise	• Singapore: Required for those applying to teach special subjects (e.g. physical education, art/music)
Written examination on pedagogy	• Finland
Observed classroom simulation	• Finland
Interviews to determine attitude and suitability	• Applied by most countries, but may not be uniformly applied or mandated within and across countries, e.g. used in Australia by some teacher training institutes such as the University of Notre Dame Australia
Psychological/ personality test	• More rarely applied at some teacher training institutes, e.g. the University of Melbourne Teacher Selector tool (piloted in or around 2013 to test for extroversion, cultural sensitivity, etc.)

Prior teaching experience	• Usually not required in most countries • Singapore: Some applicants take on full-time but temporary contract teaching stints for experience prior to matriculation in formal teacher education program
Other relevant professional experience	• Usually not required in most countries
Competitiveness/ selectivity of admission	• Finland: On average, 1 in 10 applicants for primary school teaching accepted; 5,000 out of 20,000 applicants accepted across all levels • Singapore: On average, 1 in 8 applicants accepted

Discussion on merits and developments in best practices: There is no one-size-fits-all approach to designing selection criteria. It is pointed out, however, that top-performing systems do have intentionally stringent selection criteria. The importance of stringency must be emphasized to pre-empt negative repercussions on all stakeholders:

- For students, a bad selection decision "can result in up to 40 years of poor teaching";[12]
- For potential teachers, over-supply can result in difficulty finding teaching jobs;
- For teacher education programs, increased quantity results in a dilution of quality and classroom experience; and
- For the education system and the public, teaching becomes a low-status occupation.

Some countries have also experimented with different selection processes in recent years, bearing in mind the objective of effective attitude and aptitude assessment. For example, Melbourne University has instituted a Teacher Selection Tool to supplement the traditional use of academic performance as defined by the Australian Tertiary Admission Rank (which has become unreliable due to various reasons including inconsistencies in the awarding of bonus points).[13] Professor John Hattie has commented that the test assesses a "broad range of traits from extroversion and agreeableness to neuroticism and cultural sensitivity", and that "university entrance ranks and interviews were

insufficient to find the best students".[14] On the other hand, many countries such as Finland and Singapore continue to require panel interviews, which continue to be effective screening mechanisms when conducted with consistency by experts, officials and education professionals who are able to test for candidates' professional fit through the invaluable opportunity of personal interaction.

RECRUITING THE RIGHT CANDIDATES FOR TEACHING INVOLVES GETTING PEOPLE WITH THE RIGHT APTITUDE AND ATTITUDE. APTITUDE REFERS TO THE "WHAT" AND "HOW" OF TEACHING. ATTITUDE COMPRISES A SENSE OF CALLING AND COMMITMENT TO THE HOLISTIC DEVELOPMENT OF THE CHILDREN AND YOUTH. TO IDENTIFY TEACHERS WITH THE RIGHT APTITUDE AND ATTITUDE, A RANGE OF TOOLS BEYOND ACADEMIC ASSESSMENT SHOULD BE EMPLOYED, INCLUDING: INTERVIEWS, CLASSROOM SIMULATIONS, PRIOR TEACHING EXPERIENCE OR EVALUATIONS OF VOCATIONAL FIT.

Case study of effective recruitment: Finland[15]

The Finnish teacher education model is widely lauded. In this section, we focus on an in-depth look at the first component of this model: Finland's extremely selective admissions process, designed to sieve out candidates with the best potential aptitude and attitude for teaching.

In terms of selectivity, it is widely known that Finland's admission to its university teacher education programs is highly competitive, with an average of one in ten successful applicants for primary school teaching (the most prestigious and in-demand program) and 5,000 out of 20,000 successful applicants across all levels of education. For example, the University of Helsinki accepted 340 applicants out of the 3,200 who applied in 2013. Finland's admissions

have in fact become more competitive over the last decade and a half since 2001: in 2001, with just under 1,000 places available for primary school teacher education programs, there were over 5,000 applicants. By 2014, with roughly the same number of available places, the number of applicants had increased to over 8,000.

The admissions process consists of two stages.

- Firstly, candidates take a nationally-administered standardized entrance examination, which consists of various psychometric tests. The entrance exam also includes various aspects of pedagogy.

- Based on the results of the first stage, candidates are invited to the next round of selection. The second stage is administered at the discretion of the universities offering teacher education programs. The second stage often includes an observed simulation activity whereby a small group of applicants conduct themselves in simulated classroom situations to determine their aptitude and skills for teaching, for example, interpersonal and problem-solving skills; and an interview with university faculty in which their understanding of educational issues, interest in teaching and other factors are assessed.

To flesh out the above selection process in more detail, we use the following example of how students are selected for primary school teacher programs at the University of Jyväskylä (and compare this with other university programs).

- Generally, universities and teacher education programs have the autonomy to design the student selection procedures. However, at present, Finnish universities providing primary teacher education administer a joint first step for student selection. This is called the VAKAVA exam. An applicant only submits one application, but can identify at most three universities in order of preference.

- All applicants are invited to complete a paper-and-pencil test, which is the same at every university. This examination is based on six to eight scholarly articles published in the field of education, which are announced approximately two months before the examination. For example, the 2014 examination included background readings of various articles, which comprised diverse titles such as "Development and assessment of working memory in child", "Equality and justice in basic education placement and selectivity", and "Change in education

policy and school's position in Europe".

• The VAKAVA exam consists of multiple-choice questions and the purpose of the test is to assess how well the applicants can use and apply knowledge in order to resolve different problems encountered in educational contexts.

• The scores earned from the VAKAVA exam are used to select applicants for the second stage of the selection procedure. In 2015, the University of Jyväskylä invited 264 out of 1817 applicants to the second stage and accepted 80.

• This stage evaluates the candidate's suitability for the teaching profession. Each university has its own procedures for this stage. These differences often reflect differences in the curricula between universities. For example, at Helsinki University, the Eastern University (Joensuu Campus and Savonlinna Campus), and Rovaniemi University, emphasis is placed on matriculation examination scores, individual as well as group interviews. The University of Jyväskylä uses matriculation examination scores and individual interviews as well, but also includes personality testing. While some universities use VAKAVA examination scores only at the first stage, the universities of Oulu, Tampere and Turku take these into account at the second stage as well.

• All universities emphasize the evaluation of the candidate's cognitive attributes. These are assessed by the VAKAVA exam and grades from the matriculation examination. There are differences, however, between universities in terms of how much credit is given for the matriculation examination. For example, in Jyväskylä, the importance is relatively low, and only the grade for applicants' first language is taken into account. Academic achievement is an important element, as it predicts individuals' success in their studies, as well as their future job performance. But academic achievement does not necessarily demonstrate suitability for the teaching profession; thus, other elements are included in the selection procedures.

• All universities include individual or group interviews in the student selection process. Each university has its own interview protocol. Interviews are carried out by faculty members who are trained in the interview process. Interviews are designed to assess the applicant's motivation and engagement in teachers' work, amongst other things.

- Some universities, such as the University of Jyväskylä, also use other attributes in the selection process, as research evidence has shown that selection interviews can be biased. For example, a candidate may seek to answer the interviewer's questions in a way which he or she believes will make a favorable impression. In Jyväskylä, a personality trait test is included in the selection procedure. This is used to screen out applicants with personality traits which are counter-productive when it comes to effective teaching (e.g. high social anxiety) and to survey applicants' relationship skills, psychological adjustment and ability to develop skills and gain knowledge relevant in the teaching profession.

This extremely rigorous selection process based on a consideration of all the above factors ensures that Finnish teachers are of the highest quality from the get-go.

2 • COMPENSATION AND INCENTIVES

The importance of designing the right incentive structures

While compensation and other related incentives are important for attracting and recruiting potential teachers, they are also important in the longer term for retaining and motivating existing teachers to perform at even higher levels.

We recognize that the pool of potential teachers is "influenced by some combination of the occupational status, work environment, sense of personal contribution and the financial rewards",[16] and that the types of incentive policies crafted should be made in response to motivations identified.

In this section of the report, we take a holistic approach to designing incentive structures by looking first at the motivations for and against persons joining the teaching profession, and then exploring in more detail the types of compensation and incentive options available to policymakers, drawing upon global best practices.

Identifying motivations for and against joining the teaching profession

Types of motivations: While there are numerous reasons why people are attracted to, or deterred from, the teaching profession, academic literature in this regard has usefully grouped these into three main categories:[17]

- **Altruistic reasons:** Reasons associated with seeing teaching as a socially worthwhile and important profession, coupled with a desire to help children succeed and contribute to societal improvement.

- **Intrinsic reasons:** Reasons related to the job activity itself, such as an interest in using subject matter knowledge and expertise, or a desire to exercise competence.

- **Extrinsic reasons:** Reasons not related to aspects inherent in the work of teaching, for example, longer holidays, status or salary.

Reasons why people are attracted to teaching: Studies have shown a whole range of motivations for why people are attracted to teaching. The diversity of results gathered reflect the country and context-specific nature of the study being done, and while certain common patterns may emerge, it is important to recognize that policy-makers must be alive to the particular sentiment and perceptions of those potentially considering a teaching career within each specific locality. The following table outlines some of the recent literature across the globe:

Table 2: Studies on motivations for joining the teaching profession

Study	Conclusions on motivations for teaching
Flores and Niklasson (2014)[18]	In Portugal, the most common reasons for joining teaching include: working with children, enhancing knowledge in a given field, developing skills in social relations, and contributing to society. In Sweden, the most common reasons for joining teaching were: working with children, contributing to society, developing leadership skills, and working with youth.
Jungert, Alm and Thornberg (2014)[19]	Altruistic and intrinsic reasons are main job motivations for Swedish student teachers, whereas extrinsic motivations were of less importance
Azman (2013)[20]	Malaysian student teachers tended to choose teaching for altruistic reasons foremost
Lin et al. (2012)[21]	Primarily social utility values
Watt et al. (2012)[22]	Intrinsic reasons (e.g. perceived teaching related ability, desire to work with children), altruistic reasons (desire to make a social contribution, e.g. due to previous positive learning experiences)
Kilinc, Watt and Richardson (2012)[23]	Altruistic social utility and a desire for a secure job tend to be the primary factors in Turkey
Mtika and Gates (2011)[24]	"Negative" reasons: failure to follow up on desired career choice; springboard for career elsewhere; means to upgrade qualifications

UNICEF (2011)[25]	PA large number of students in Kyrgyzstan, Armenia, Bosnia and Herzegovina, Uzbekistan, the Republic of Moldova and the Former Yugoslav Republic of Macedonia enrolled in teacher-education studies because they were turned down by more popular degree programs and because funding was available
Gao and Trent (2009)[26]	Chinese student teachers surveyed were attracted to teaching based on extrinsic rewards and because skills in ITE programs were transferable to other professions
Manuel and Hughes (2006)[27]	Pre-service teachers in Australia tended to take up teaching due to personal aspirations to work with young people
Kyriacou and Coulthard (2000)[28]	In a UK-based study, it was found that persons attracted to teaching were motivated primarily by the following reasons: teaching was perceived as a job where one could contribute to society; it gives one responsibility, provides opportunities to work with children and care for others

Reasons why people are not attracted to teaching: No less important are for policymakers to understand the reasons why people are not attracted to teaching. It has been pointed out that policymakers need to find out what students who are "undecided" or "against" teaching feel are the most important factors to them in finding a job and demonstrate that teaching may indeed meet these factors, in situations where there are perception gaps between what people view teaching as and the reality of the profession.[29]

- For example, Kyriacou and Coulthard point out that some students who are undecided about teaching view their ideal job as one they will "find enjoyable", with a "pleasant working environment", "good promotion prospects", "reasonable workload" and "high earnings over the length of a career". However, they do not perceive teaching as one that can fulfill these expectations. To this end, recruitment campaigns that appeal to altruistic motivations (e.g. "no one forgets a good teacher") may not actually be properly targeted at the "undecided" group who have not yet formed an inclination for or against teaching.[30]

- Similarly, in a 2010 McKinsey study of US-based respondents,[31] it was found that many identified competitive

starting salaries, professional pride and challenge, and career advancement as important attributes of their ideal occupations, but felt that teaching would not be able to provide this. For example, on the point of remuneration, the study noted that more than half the respondents believed that teachers' starting salaries were under $30,000 (USD) when the national average was actually $39,000. Furthermore, only one in three respondents believed that teaching would pay enough to support a family. The study noted that such misperceptions of the profession result in few top-third students being attracted to teaching.

Compensation packages

Understanding the motivations for entering the teaching profession is the first step to designing better recruitment and retention policies. While compensation is certainly not the only motivation, or even the decisive one in some cases (as pointed out in the studies above), it is a key common denominator across all countries and one of the largest items in educational budget allocations. Hence, finding the right formula for sustainable financial compensation is a priority for policymakers. Some comparative statistics of how teachers are remunerated across the world are reflected in Annex A.

Global best practices for compensating and incentivizing teachers throughout careers

POLICYMAKERS SHOULD RECOGNIZE THAT COMPETITIVE SALARIES ARE AN IMPORTANT DRAW, BUT AS LONG AS THEY ARE WELL BENCHMARKED AGAINST OTHER OPTIONS AVAILABLE...THEY NEED NOT EXCEED THESE BENCHMARKS SUBSTANTIALLY TO ATTRACT A HIGHER QUANTITY AND QUALITY OF CANDIDATES.

Keeping compensation competitive: Policymakers should recognize that competitive salaries are an important draw, but as long as they are well benchmarked against other options available to tertiary-educated students looking towards professional careers (in order to account for opportunity costs), they need not exceed these benchmarks substantially to attract a higher quantity and quality of candidates. These insights are confirmed by a number of studies:

- The 2011 OECD Background Report for the International Summit on the Teaching Profession[32] points out that where teachers' salaries are low relative to professions requiring similar qualifications, teacher supply tends to be price-elastic (i.e. for any given percentage increase in salary, the supply of potential teachers increases by a greater percentage). Conversely, where teachers' salaries are already relatively high, teacher supply tends to be less elastic (i.e. any given percentage increase in salary produces a lower percentage increase in supply).

- The 2007 McKinsey report[33] also notes that raising salaries above the market average for graduates does not lead to substantial increases in the quality or quantity of applicants. In the UK, increases in below average teacher salaries by a small mount of ten percent had resulted in a notable increase in applications of 30 percent whereas in Switzerland and Germany where salaries were already relatively high, further increases in salary appeared to have marginal impact on the quantity or quality of applicants to teaching.

Structuring and scaling compensation packages over time: Given inevitable budgetary constraints, policymakers also need to choose between:

- Frontloading compensation while keeping increments and the overall difference between starting and maximum salaries small; and

- Keeping starting salaries relatively low while allowing for greater increases over time and higher salary ceilings towards the end of career progression.

It is noted that countries such as Finland and the Netherlands have adopted the former model, which has the advantage of allowing policymakers to institute competitive starting salaries (e.g.

Netherlands increased its starting salaries in the 1990s from below the market average to being in line with the private sector).[34] On the other hand, frontloaded compensation means that salaries do not increase at a pace reflected in other professions, and may be a more attractive option where retention is not strongly correlated with salary progression, such as in the Finnish context. Many top-performing countries such as Canada, South Korea and Singapore do make room for the best and most experienced teachers to progress up a salary ladder with a relatively high ceiling – a natural incentive for continued retention and performance. Annex B summarises teacher salary scales in selected high-performing countries.

Entry-level incentives: As potential applicants to the teaching profession at the undergraduate level tend to have lesser savings at the starting stages of their careers, entry-level incentives would be an important immediate factor taken into account in making a decision whether to join the teaching profession. Top-performing countries are acutely aware of this factor and have devised a number of incentives schemes designed to appeal to applicants. The following table sets out the best practices gathered from various countries:

Table 3: Entry-level incentives[35]

Type of incentive	Adopted by which countries?
Coverage of tuition fees	Singapore (covered by the Ministry of Education) in return for teaching bond; partial support in Canada and Australia
Fee waivers	Finland, France, Germany
Allowances	Singapore (for example, funds to purchase resources such as books and laptop computers)
Scholarships	Singapore (Teaching Scholars Program at the National Institute of Education, Public Service Commission, Ministry of Education and Education Merit Scholarships)
Loan/gifts	Netherlands (students provided with a loan to pay for expenses, which will be converted into a gift if they finish their exams in time)
Stipends	Singapore (provision of monthly stipend during teacher training, estimated at 60 percent of starting teacher salary)

Bonuses and non-salary financial incentives: Throughout the course of a teacher's career, it is recognized that pay should not only be tied to seniority but to performance. Hence, many top-performing countries also include components of remuneration which vary according to the teacher's performance (which may or may not be tied to student performance, an issue we discuss in our section of evaluating teachers below):

- **Performance bonus:** In Shanghai, Korea and Singapore, performance bonuses of varying amounts are used to incentivize performance. In Singapore and Shanghai, it is noted that 30 percent of the total remuneration packages can come from bonuses awarded on performance assessments.[36] In Korea, it is noted that performance bonuses have been recently instituted and appear to be awarded in fairly modest amounts ranging from $2,200 - $3,000 (USD).[37]

- **Retention bonus:** In Singapore, retention is promoted additionally through the use of periodic retention bonuses. These range from $10,000 (USD) to $36,000 every three to five years, and arguably is a key reason why attrition in the Singapore teaching force remains at a relatively low three percent.[38]

- **Additional pay for extra duties taken on:** In some countries such as Finland, teachers can earn additional compensation for additional hours of duty undertaken over and above the basic teaching load. Teachers in all European countries (with the exception of Cyprus, Latvia, Lithuania, Malta, Romania and Scotland) receive additional payments for working overtime beyond that stipulated in their teaching employment contracts. In countries such as Slovenia, teaching outdoor classes allows for increased compensation by up to 20 percent.[39]

Non-financial incentives: In recognition of the fact that intrinsic and altruistic factors play an important role in attracting and retaining teachers, many countries also include non-financial incentives as part of a holistic package.

- In Singapore, the TEACH Framework incorporates measures to incentivize teachers through professional development and establishing work-life harmony. Started in 2005, the Professional Development Continuum Model (PDCM) scheme heavily subsidizes in-service teachers to pursue a postgraduate degree. The Postgraduate Scholarships and Awards scheme aims to provide professional development

in postgraduate studies to outstanding teachers in all career tracks. Recipients of the scholarship or award will pursue postgraduate education in subject-specific areas, specialized areas and general curriculum to level up on professional expertise and competency. Under the Learning & Development Scheme, teachers will be entitled to claim up to $400 or $700 (USD) per year, depending on the length of service, for any learning-related expenses incurred for subscriptions to magazines and journals, professional societies, and purchases of computers and IT-accessories. Sabbatical opportunities provide teachers with the time to undergo meaningful professional growth in their career.

COMPENSATION PACKAGES SHOULD BE STRUCTURED TO ENSURE THAT THE BEST PROGRESS UP THE SALARY LADDER ON THE BASIS OF PERFORMANCE. GOOD SYSTEMS OFTEN USE A MIX OF FINANCIAL AND NON-FINANCIAL INCENTIVES TO MOTIVATE TEACHERS. THE FORMER INCLUDES PERFORMANCE AND RETENTION BONUSES, AND ALLOWANCES FOR EXTRA DUTIES. EQUALLY IMPORTANT IS THE LATTER, WHICH INCLUDES PROVISIONS FOR PROFESSIONAL DEVELOPMENT, POSTGRADUATE AWARDS, AND SABBATICAL OPPORTUNITIES. THESE MAKE FOR MEANINGFUL GROWTH AND ENCOURAGE RETENTION.

Case study: Ontario, Canada[40]

Most studies tend to cite South Korea, Singapore and Finland as role models of competitive compensation and effective career-long incentivization. In this section, we further discuss the case of Ontario, Canada, which has become a high-performer in recent years. In educational outcomes, as in its quality of life and government policies, Canada is a global leader. In 2010, Canada ranked sixth

overall in the Program for International Student Assessment (PISA) – the highest English-speaking and French-speaking nation in the world (OECD, 2010). Looking at the PISA results province-by-province, four Canadian provinces performed particularly well – Ontario, Alberta, British Columbia, and Quebec.

Canada shares some commonalities with other high-performing education systems, such as Finland and Singapore. Canada values teaching and insists on a professional program of university-based training for all public school teachers in a designated number of teacher education institutions. There are about 50 teacher education programs in Canada making it easy for provincial governments to regulate quality. Applicants to teachers colleges are in the top 30 percent of their college cohorts.[41]Unlike its closest neighbor, Canada does not offer fast-track programs like Teach for America or other alternative programs to bring people with minimal training into the profession.

In April 2014, the Ministry of Education released the latest phase of Ontario's education strategy. Entitled "Achieving Excellence: A Renewed Vision for Education in Ontario," the document builds on the education system's three current priorities: increasing student achievement, closing gaps in student achievement, and increasing public confidence in publicly funded education. The strategy has four renewed goals for education. The first goal is achieving excellence where students of all ages will achieve high levels of academic performance, acquire valuable skills, and demonstrate good citizenship. The second goal is to ensure that all students will be inspired to reach their full potential, with access to rich learning experiences that begin at birth and continue into adulthood. The third goal is to promote the well-being of all children and students by developing enhanced mental and physical health, a positive sense of self and belonging, and the skills to make positive choices. The fourth goal is to have confidence in a publicly funded education system that helps develop new generations of confident, capable, and caring citizens.

School boards are responsible for the hiring and appointment of teachers to Ontario schools in the public system. Teachers apply to schools of their choice and are assigned to positions based on the program needs of the school and the safety and well-being of students, as well as their own qualifications and seniority. Principals generally make these assignment decisions. Some school boards also have staffing committees, consisting of school and school board staff, and representatives of teachers' federations to assist in making staffing

decisions. All teachers in the public system must be members of the Ontario Teachers' Federation and one of its teachers' union affiliates, and all school boards are responsible for negotiating local collective agreements with the federations. Ontario's employment market is now characterized by an oversupply of trained teachers in most subject areas, especially in elementary schools. Even though the oversupply means that it now takes the average new teacher longer to secure a permanent full-time contract, surveys of teachers beginning their careers in Ontario schools reveal a high level of professional satisfaction and an eagerness to stay in the field.

Salaries of teachers in Ontario are decided by each school board through negotiation with the local teachers' federations. Previously, all parties had agreed to four-year collective agreements to avoid labor disruptions. In 2012 disputes arose over the implementation of these collective agreements. Recently, in 2014 the government passed the School Boards Collective Bargaining Act to formalize a dual-tiered bargaining system, with key financial issues to be centrally discussed between the provincial government, boards, and unions, while particular local issues are to be decided between individual school boards and location-specific union representatives.

Generally, teachers in Ontario are paid between $42,000 and $92,000 (CD) (approximately $32,000 - $69,000 USD) across the span of a 12-year salary grid. In 2011, the annual starting salary for a new teacher with five years of university education (a degree with a teaching certificate) ranged between $45,709 and $58,436 (CD) (approximately $34,500 - $44,100 USD).[42] In addition, teachers with more than ten years of service received between $76,021 and $97,605 (CD) (approximately $57,400 - $73,700 USD).[43]

The salary grid provides for ten years of experience and four qualification categories. It is based on both educational qualifications and teaching experience. A teacher would first be given a salary-rating category (between 1 as the lowest and 4 as the highest) by the school board in order to determine his place on the grid. To improve one's rating category, teachers can seek to complete various additional qualification courses evaluated via the Qualifications Evaluation Council of Ontario (QECO) and the Certification Department of the Ontario Secondary School Teachers' Federation (OSSTF). After ten years of experience, salaries will only move further if teachers have not already obtained the highest qualification level, or through negotiations for increases.

Other incentives are also available. Government funding is available to incentivize enrolment in pre-service programs. For example,

in the 2009-2010 period, an estimated $8,517 (USD) was provided for each full-time teacher candidate for one year of initial teacher training, which covered approximately 60 percent of the training costs.[44] Teachers also receive allowances for additional duties such as subject department heads, or for volunteering for extracurricular activities or taking on additional mentoring roles.

While performance-based remuneration has its critics[45] as there are concerns over the fairness of merit pay plans given the difficulties of assessing teaching performance, the potential negative effects on cooperation amongst teachers, and the potential negative effects on the morale of teachers who are not eligible for merit pay,[46] proponents of performance-based pay recognize that rewarding teachers for good performance helps to attract, retain and motivate teachers. Tomlinson observes that performance-based pay is about motivating people, and developing performance-oriented cultures.[47] Teachers, who are not motivated by financial rewards, can be encouraged with non-financial rewards.[48] These rewards can include, for example, satisfaction from high student achievement, recognition, influence, learning new skills, and personal growth.[49] School-based rewards are seen by its proponents as a means of providing motivation by introducing clear goals for teachers to lead their charges to new levels of achievement.[50]

The Ontario model thus shows how the interests of various stakeholders have been taken into account in crafting attractive compensation packages for recruiting and motivating teachers across the course of their careers.

3 • INITIAL TEACHER PREPARATION AND ACCREDITATION STANDARDS

Overview

Initial teacher preparation and accreditation is the first step in developing teachers. As students tend to spend between two to seven years in this process, policymakers should ensure that teacher education programs are crafted to meet specific goals of subject-matter mastery, as well as training in pedagogical techniques and the inculcation of professional values.

In this section, we explore various issues relating to the design of initial teacher training programs, including the qualifications obtained, length of program, course content, practical training components, any further accreditation requirements (such as examinations) and mentoring structures.

Key features of initial teacher preparation processes

The initial teacher preparation process varies among countries. Taking program length as an example, OECD reports that training is longest in Germany (five-and-a -half to six-and-a-half years) and shortest in Austria, Belgium, Spain, England, Israel and Switzerland (three to-three-and-a-half years). In 21 countries, competitive exams are required to enter pre-service teacher training, but that is not essential in every high-performing system. For example, Singapore does not require this component, as its relatively small jurisdiction allows for better control of the demand and supply of teachers.

Given the variety of processes, the under-mentioned table distills key points of comparison in the design of teacher preparation programs as a reference for policymakers, drawing from the experiences of top-performing countries including Canada, Finland, South Korea, Singapore and Shanghai.

Table 4: Comparison of initial teacher preparation programs[51]

TYPE OF QUALIFICATIONS

Canada
Minimum Bachelor of education or Bachelor degree with additional education certification; may require further qualifications e.g. for specialized subjects at secondary level

Finland
Masters degree is the basic requirement for primary school to upper secondary levels.

Primary teachers are required to major in education with a minor in two primary curriculum subject areas.

Secondary teachers must major in the subject to be taught and complete pedagogical education in fifth year.

Singapore
Diploma in Education (Mother Tongue, Music, Art, Special education)
Bachelor of Arts/Science (Education),or Postgraduate Diploma in Education

South Korea
Bachelor degree and teacher certificate

China (focus on Shanghai)
Teaching diploma/ Bachelor degree, followed by national teaching certification. In Shanghai, primary school teachers must hold post-secondary, sub-degree diploma. Secondary teachers are degree-holders.

LENGTH OF PROGRAM(S)

Canada
Depends. In Ontario, since 2015, requirement of 2 years (4-semesters)

Finland
5 – 7.5 years

Singapore
2 – 4 years

South Korea
About 4 years

China (focus on Shanghai)
4 years for upper secondary teachers, 2 years for junior secondary teachers. In Shanghai, 3 – 4 years.

PROGRAM PROVIDERS

Canada
Canadian universities e.g. Ontario Institute for Studies in Education, University of Toronto; about 50 programs in total

Finland
Finnish universities, monitored by Higher Education Evaluation Council

Singapore
National Institute of Education (autonomous institute within Nanyang Technological University)

South Korea
Teacher colleges (11 across South Korea), and departments of education in colleges and universities (e.g. National University of Education)

China (focus on Shanghai)
Universities provide longer programs for upper secondary teachers, while junior colleges train lower secondary teachers. In Shanghai, primary teachers are trained at Shanghai Normal University, while secondary teachers are trained there as well as at East China Normal University.

OVERVIEW OF COURSE CONTENT/APPROACHES

Canada
In addition to subject matter expertise, enhanced focus on pedagogy for diverse classrooms and special needs students

Finland
Generally, includes educational theory and subject-specific pedagogy. Department of Teacher Education at University of Helsinki offers Class Teacher Education, Craft Studies and Craft Teacher Education, Early Childhood Education, among others. Programs contain heavy research-based orientation on teaching and learning, integrated into various courses. Pupils must complete Masters thesis on topic relevant to educational practice.

Singapore
Includes both subject content and pedagogy, including innovative methodologies such as problem-based learning and twenty-first century pedagogies (e.g. teaching for independent learning and creativity, and addressing different learning styles)

South Korea
Mixture of both subject-matter content and pedagogical theory. Generally, 70% of curriculum comprises major courses including general and subject-specific pedagogy, and advanced courses in subject area (including a thesis). 30% includes general courses with compulsory modules in social or natural sciences, as well as various electives.

China (focus on Shanghai)
Programs include courses in specific subjects and pedagogy.

CLINICAL PRACTICE/ PRACTICUM

Canada
Minimum 80 days

Finland
1 full year of practicum training; 15 – 20% of teachers' overall preparation time

Singapore
For 4-year undergraduate program, regular practicum experiences in every year (approximately 20 weeks in total). For 1-year graduate program, 10-week practicum.

South Korea
9 weeks including courses in teaching, participation, observation and administrative work practices. 2 further weeks of in-school pre-employment training and 6 months of post-employment training.

China (focus on Shanghai)
Not uniform. In Shanghai, 8 week teaching practice is required for both primary and secondary school teachers.

ACCREDITATION PROCESSES

Canada
Most provinces require examination or other forms of assessment

Finland / Singapore
No

South Korea
Competitive examination administered by Metropolitan and Provincial Offices of Education

China (focus on Shanghai)
National Mandarin language test, and 4 examinations in pedagogy, psychology, teaching methods, and teaching ability

MENTORING STRUCTURES AND OTHER INITIATIVES

Canada
"Building Futures" program eases transition into teaching through practice-oriented workshops for candidates in final year of study

Finland
Students undergoing practice teaching give lessons independently to groups of pupils and are observed by supervisory teachers who evaluate and give them feedback

Singapore
Practicum is supervised and assessed by NIE lecturer and supervising senior teacher from school, and must be satisfactorily passed before a diploma is awarded

South Korea
Practical training involves guidance, evaluation, and classroom supervision, as well as training on various administrative duties

China (focus on Shanghai)
Assigned mentor for about 3 years, involving various aspects of teaching including materials, lesson observation, teaching methods, and marking. Teachers in Shanghai are also involved in teaching study groups to discuss lesson plans and observations by peers or senior colleagues.

Highlights of best practices

In this section, we highlight best practices of initial teacher preparation derived not only from looking at the best-performing countries (e.g. Finland or Singapore), but by looking closely at the structures of top programs, such as the Stanford Teacher Education Program (STEP) offered by the Stanford Graduate School of Education and the initial teacher program offered by the Ontario Institute for Studies in Education (OISE) at the University of Toronto.

Clear focus on acquiring specific competencies: It has been noted that education systems benefit from clear profiles of what teachers are expected to derive from their educational experiences.[52] Stanford's year-long STEP intentionally uses five curricula strands to organize its program, including i) social and psychological foundations, ii) curriculum and instruction, iii) language and literacy; iv) pedagogical strategies and iv) practicum and student teaching. Specific credits are required to be obtained for the various strands, which ensures that various competencies are accorded appropriate weight – rather than providing trainees a dense course catalogue without clear identification of the overall competencies to be obtained.[53] Leiden University's Masters degree program has eschewed traditional courses on foundations and methods for modules crafted to help teachers develop what it identifies as critical teaching roles, including that of subject teacher, classroom manager, expert in adolescent psychology, member of the school, colleague and professional.[54]

Holistic education: The OISE adopts seven principles, informed by research on best practices in teacher education that underpin its initial teacher preparation programs, including: Teaching Excellence; Equity, Diversity and Social Justice; Research-Informed Pedagogies; Learning Communities; School/Field/University Partnerships; Faculty Collaboration and Coherence. Their emphasis on a well-rounded teacher education program is not merely rhetorical. For example, there is explicit focus in modules on issues of equity, diversity and social justice, and to help students understand macro and resource-allocation issues in the larger education system. Programs are crafted to prepare student teachers for differentiated learning and classroom diversity. Teachers are trained not only to convey content but to take on roles as community leaders.[55]

Integrating theory and practice: It is important not only to balance courses on pedagogy, content and practice (in the sense of according each sufficient weight in the curriculum), but also to facilitate the integration of academic theory and research with practice. While this may seem challenging as it may require curriculum reform and re-orientation, the Finnish experience demonstrates that this can be done effectively. It is noted that the Finnish curriculum is designed to "create a systematic pathway from the foundations of educational thinking to educational research methodologies and then to the more advanced field of the educational sciences".[56] Students are trained to conduct and present research on practical aspects of education, and hence to reflect on and integrate pedagogical theory with practice. One important component of this experience lies in the practicum training, which is completed in part within special Teacher Training Schools within universities. These schools are expected to pursue research and development in collaboration with the university departments of teacher education, and work with trainee teachers on a variety of research-informed practice innovations, for example, sample lessons and alternative curriculums.

Graduated practicums with feedback and mentoring: Stanford's STEP involves a practicum with a graduated responsibility structure wherein teaching responsibilities gradually increase over the course of the year. Coupled with the mentorship of an expert Cooperating Teacher and university supervisor, this allows students to reflect on their experiences and get gradually integrated into their teaching roles. The teaching practicum comprises an average of four hours daily at the school site and a weekly seminar at Stanford. An example of the graduated structure would involve:

• The first stage of a trainee teacher creating the learning environment and building relationships with students through a formal introduction, increasing involvement by working in small groups with students and co-planning learning segments and facilitating discussions;

• Further progression to expanding the length of teaching segments with feedback from the cooperating teacher, as well as increasing involvement in students' learning by grading and giving feedback to students; and

• Taking on fuller responsibilities for teaching with intentional implementation of instructional strategies learnt in coursework and lesson-planning.

GOOD INITIAL TEACHER PREPARATION PROGRAMS ARE CHARACTERIZED BY ATTENTION TO CONTENT KNOWLEDGE AS WELL AS PEDAGOGICAL TRAINING. MOREOVER, INTEGRATING THEORY AND PRACTICE IS AT THE HEART OF ALL EXCELLENT TEACHER EDUCATION PROGRAMS. ONE WAY OF ACHIEVING THIS IS TO HAVE CLINICAL PRACTICE PROGRAMS WHICH PROGRESSIVELY INTRODUCE NOVICE TEACHERS TO THE HIGH STANDARDS AND RIGORS OF PROFESSIONAL PRACTICE.

Case studies: Finland and Singapore

FINLAND

In this section we discuss the Finnish and Singaporean models, which adopt and combine many of the above-mentioned best practices in an effective manner, though these countries have molded these practices to fit their own needs and context.
Finland has invested heavily in teacher education, in the belief that academically educated teachers are the key to high-quality teaching and good learning outcomes. Teacher education was being transferred to universities as early as 1971. The purpose of this change was to

unify primary and secondary education into a single entity, and to develop a high academic standard for prospective students. Today, all prospective teachers (both primary and secondary teachers) have to complete a Masters degree, which entails 300 ECTS or cr (1 ECTS/ cr equals 27 hours of student work) either in education (primary teachers) or in another academic subject (secondary teachers).

The primary school teacher programs are administered by the faculties of education. Finnish universities have autonomy in designing teacher education programs; however, all programs must include studies in education, pedagogical studies (including teaching practice), research studies, communication, language and information and communication technology (ICT) studies, minor studies and optional studies.

For example, at Jyväskylä University, the Bachelor of Education Degree includes courses such as "Education, society and change", "Educational administration studies", "Constructing scientific knowledge: Qualitative and quantitative research methods" and various multi-disciplinary and cross-curricular studies while the Masters of Education Degree includes advanced courses such as "Advanced phenomenology studies" and various thesis seminars.

Although there are differences in the curriculum, all universities emphasize the importance of a teacher's pedagogical thinking, their readiness to make use of research, their reflection on the theory and practice of teaching and learning and their continuing professional development throughout their teaching career. Teacher education is research-based, which means that the teaching profession is founded on sound scientific knowledge and that teachers must have the capacity to broaden and deepen their competence through their own exploration and critical reflection.

One important aspect of teacher education is the combination of theoretical and practical elements. This is especially prevalent in teaching practice. The amount of teaching practice is a minimum of 20 ETCs out of 300. In Jyväskylä, the teaching practice for primary teachers is 26 ECTs. During these studies, students develop their own teaching philosophy through reflective, dialogic and practical activities.

Every practice teaching period is combined with detailed theoretical studies which relate to the topic in question, and thus teaching practice periods are closely interlinked with other teacher studies. The idea is that theoretical studies will provide a basis for each practical period. In order to obtain more knowledge to facilitate their teaching practice, the students may read relevant literature and

discuss the subject with each other and with the teacher educators. Teaching practice is initiated as early as possible and the interaction between practice and educational theory studies is emphasized at all stages. Each teaching practice includes classroom observation, theoretical considerations, reporting and lectures along with teaching. Students teach for six hours in teaching practice I and 26 hours, 34 hours and 40 hours for practices II, III and IV, respectively.

This holistic approach to teacher training has ensured that Finland's initial teacher preparation remains of the highest quality in the world.

SINGAPORE

In Singapore, the National Institute of Education (NIE) is the premier teacher training institute. To enable students to remain competitive and relevant, NIE conducted a systemic review of the teacher education program in 2009 which led to the birth of the new Model of Teacher Education for the Twenty-first Century (TE21). TE21 presents proposals that are aimed at enhancing the fundamentals of teacher education, comprising the underlying philosophy, curriculum, desired outcomes for teachers, and academic pathways. The enhanced V3SK model, which stands for values3 (V), skills (S), and knowledge (K), focuses on three value paradigms: (i) learner-centeredness, (ii) teacher identity and (iii) service to the profession and community. The V3SK framework signifies NIE's unique paradigm of value-based teacher education. The framework "guides the design, delivery, and enhancement of NIE's programs and courses, and aims to develop teachers with requisite values, skills and knowledge necessary to function in the twenty-first-century classroom".[57]

A key feature in TE21 is the strengthened theory-practice nexus. The theory-practice gap has been widely critiqued as a shortcoming in many initial teacher training programs around the world. Singapore recognizes the need to achieve balance between practice-based learning and theoretical knowledge to develop teachers of the twenty-first century. In view of the above, NIE instituted the following practices to ensure robust initial teacher education:

- **E-portfolio: Building a conceptual map for learning and teaching**

The E-portfolio serves as a platform for student teachers to integrate their courses and organize their learning. This framework, which cuts across all courses, enables student teachers to record their learning while demonstrating their understanding of the responsibilities of a teacher. Furthermore, the implementation of the E-portfolio creates opportunities for student teachers to consolidate their learning at NIE and chart their growth according to the standards

set out on the Graduand Teacher Compentencies (GTC).

• **Practicum: Improving practice and developing teacher personhood**
The practicum is a period of internship where the student teacher is attached to a school to prepare them for the realities of teaching. It is extremely advantageous as it serves as an avenue for the student teacher to experiment and put what they have learnt into practice, obtain feedback and reflect on their role. This crucial period allows student teachers to be closely mentored by their school coordinating mentors (SCMs) and provides the opportunity to address any concerns and assumptions they hold about the profession.

• **Reflective Practice: Deliberate pause for structured reflection**
Reflection is a crucial component in both professional and personal development as it creates awareness for the individual to recall and refine their practice. It is highly beneficial in strengthening the theory-practice nexus. The Reflective Practice Model adopted in NIE programs is used in the process of coursework and put into practice after every lesson to encourage student teachers to consciously and methodically reflect on their assumptions.

• **Focused Conversation: Challenging assumptions and co-constructing knowledge**
Focused conversations aim to promote student teachers' personal philosophies towards teaching. These have been incorporated into the practicum process. They provide ideal spaces for student teachers and their SCMs to co-construct knowledge involving teaching and learning while encouraging student teachers to confront their prior assumptions and beliefs. These conversations enable student teachers to consolidate their beliefs and integrate their learning across the courses taken. Very often, student teachers are asked to share authentic situations which they encounter, mostly classroom management and student engagement. SCMs would then take the opportunity to challenge the student teacher's beliefs and refine their understanding. This process enables both the student teacher and SCM to chart the progress of the beginning teacher based on the expectations of the GTCs.

Hence, like Finland's holistic and rigorous approach to initial teacher preparation, Singapore's NIE programs aim to put in place robust foundations for teachers going into practice.

4 • CAREER DEVELOPMENT STRUCTURES

Overview

As with many other professions, it is important for education systems to develop and articulate clearly defined career development tracks for teachers to progress on. Management research often demonstrates that career advancement is important to retain and motivate professionals, apart from compensation and other financial incentives.[58] Given that education falls largely within the purview of the public sector, it becomes important for policymakers to facilitate the creation of such career tracks, which in other professionals (such as legal services, architecture or consultancy) may be driven by private sector forces.

In this section we examine the available career development structures across a number of countries, concluding with case studies of Singapore and New Zealand's reform of their career tracks. While some may assume that career progression is rather self-explanatory in that teachers would usually move on to greater administrative and leadership roles with seniority, both countries' carefully constructed career track models show how it is possible to maximize the various skills sets and potential of individual teachers who may have comparative advantages in some areas (e.g. leadership or teaching). These models are therefore examples of the leading models in the world presently and ones that various countries can look to for reform.

A comparative look at career development structures across countries[59]

There are different approaches to career development around the world, depending on the degree to which career progression is structured and formalized, as well as the flexibility involved in moving within career tracks in the teaching profession.

Interestingly, some high-performing education systems such as Finland's do not have clearly-defined career ladders. In Finland teachers are well known to have some degree of autonomy over their classrooms and lesson plans. Hence, advancing in seniority does not necessarily correspond with greater degrees of autonomy or responsibility in teaching management. Of course, teachers with the relevant experience and leadership expertise may transit to become principals, who are appointed by the local municipal authority. The

responsibilities of principals will additionally encompass resource management and other financial and budgetary responsibilities. However, in terms of supervisory responsibilities, the strong culture of teacher autonomy means that principals do not traditionally micro-manage or observe teachers in order to evaluate them.

Most countries do have some formalized career ladders. In Canada teachers may be promoted to department heads. They can take on further training if they aspire to leadership roles in the school system subsequently. In Ontario, in order to become a principal, a teacher must have at least five years of teaching experience, certification in three of four age divisions (these are classified as primary, junior, intermediate and senior), two Specialist qualifications or a Masters degree, and have completed the Principal's Qualification Program. In Hong Kong, a teacher who has a teacher's certificate or the status of a qualified teacher may be promoted to the level of Assistant Principal once he or she possesses the appropriate experience, which usually involves several years of teaching followed by several years of experience as a head teacher. A teacher with a postgraduate diploma in education may also be promoted to the position of Head of School with the appropriate job experience and training. In South Korea, teachers do aspire to the positions of vice-principal or principal, which are very much in demand due to the status it carries. Principals are responsible for school management, teacher supervision, and maintaining school facilities. Promotion is based on seniority, annual performance, and research achievement. Teachers can earn points in each of these areas that result eventually in promotion.

At the end of the spectrum are education systems with extremely well defined career tracks, such as those of Shanghai and Singapore. The systems have defined both the types of career ladders available, as well as the particular rungs on each ladder that teaching professionals would climb. In Shanghai, for example, there are four hierarchical grades for teachers that indicate professional status: Third grade or novice teachers; Second grade or intermediate teachers; First-grade or advanced teachers; and Senior-grade or master teachers. Teachers would be promoted from third to second grade after five years of teaching. Promotion to the first grade requires another five years of service, in addition to a successful internal evaluation by the school and external evaluation by the district. Promotion to master teacher is not automatic (even with many years of seniority) and applies to distinguished educators who comprise 0.1 percent of Shanghai's teachers after careful consideration by district leaders. In Shanghai, teachers who have good teaching records and show leadership potential can be promoted to administrative positions

within schools, or to official positions in the education bureaucracy.

While it is possible to have a system (such as Finland's) which avoids carving out well defined career tracks in order to preserve some degree of autonomy, it may be preferable to define career tracks with precision, while ensuring that multiple tracks are available to maximize the different skills sets and potential of individual teachers. This would give teaching professionals both guidance and flexibility in their career progression.

THE CHALLENGES OF EDUCATION TODAY CALL FOR INCREASINGLY SOPHISTICATION AND SPECIALISATION. CLEARER PROFESSIONAL PATHWAYS ARE NEEDED TO DEVELOP SKILLS, GROW CAPABILITIES AND PROVIDE OPPORTUNITIES FOR ADVANCEMENT. CREATING TRACKS FOR TEACHERS, SCHOOL LEADERS AND CONTENT AND PEDAGOGY SPECIALISTS WILL GO A LONG WAY TO HELP HEIGHTEN PROFESSIONALISM AND GUIDE TEACHING PROFESSIONALS WITH A VISION OF ADVANCEMENT THROUGH THE LONG HAUL OF THEIR CAREERS.

Case studies: Singapore and New Zealand

SINGAPORE

Two decades ago, Singapore's teaching force was facing problems of attrition with younger teachers leaving and older ones retiring. Presently, attrition rates remain remarkably low. One key reason has to do with facilitating job differentiation for teachers having different inclinations and skill sets. Singapore has well-defined career ladders designed to help teachers to attain their full potential in the trajectory of their professional development. These include the Teaching Track, Leadership Track, and Senior Specialist Track.

Teaching Track: The Teaching Track caters to the majority of officers in the Education Service. The Teaching Track provides improved professional development advancement opportunities for excellent teachers. The peak appointment on the Teaching Track is "Master Teacher", appointed from amongst Senior Teachers. Master Teachers continue to teach and help develop teaching excellence through mentoring, developing good teaching practice and model lessons. Master Teachers earn the equivalent of a senior Head of Department. Teachers on the Teaching Track have opportunities to advance professionally through advanced diploma and higher degree programs and other forms of professional development. Teachers moving up to the higher levels are required to meet thresholds in terms of skills and knowledge and have to demonstrate the necessary competencies and performance for the higher job level.

Leadership Track: The Leadership Track gives teachers opportunities to take on leadership and administrative positions in schools and at the Ministry of Education's headquarters. For example, those on the leadership track can progress from being heads of departments to school principals, and further on to roles within the ministry such as superintendents/directors. Heads of Department with heavier responsibilities are allowed to be promoted to a higher level. Special allowances and increased responsibility allowances are also available. For progression to the position of school principal, potential candidates go through interviews with senior management, including directors in the Ministry of Education. They also undergo a Leadership Situation Exercise which is a two-day simulation test to gauge their leadership potential. After selection, they are required to attend a half-year Leaders in Education Program conducted by NIE which exposes them to macro as well as micro issues which leaders tend to face, and which also includes study visits to other countries.

Senior Specialist Track: In the Ministry of Education, the Senior Specialist Track is offered to develop a strong group of officers with deep knowledge and skills in specific areas to "innovate, break new ground and keep Singapore at the leading edge in educational developments."[60] Four areas of specialization are identified: Curriculum and Instructional Design; Educational Psychology and Guidance, Education Testing and Measurement, and Research and Statistics.[61]

All of these tracks have salary grades that are designed to provide all educators (teachers, leaders, and specialists) with an incentive to advance as far as they can. For example, a senior teacher, can receive a salary equivalent to a school vice principal. Hence, there is no need

for excellent teachers to depart from their career track inclination to earn higher pay.[62] The performance of the relevant Education Officer is ranked (A through E) in comparison with colleagues at similar substantive grades.[63] Annual Performance Bonuses are linked to the rankings, with outstanding classroom teachers eligible to earn up to two months performance bonus. The bonus is paid in March each year for the work done in the previous year. [64]

Teacher performance is also monitored and evaluated via the Enhanced Performance Management System (EPMS) which determines when they are eligible for advancement up the career ladder. The EPMS is a competency-based performance management system that spells out the competencies expected at each career stage and within each career track. It is a comprehensive development-oriented system which documents teachers' career progressions. The EPMS includes an annual evaluation in three areas: Professional Practice, Leadership Management and Personal Effectiveness. In relation to performance management, teachers undergo three work review meetings: performance planning, performance coaching and performance evaluation.

In performance planning, the teacher starts the year with self-assessment and develops goals for teaching, instructional innovations and improvements at the school, professional development and personal development and meets with his/her reporting officer who is usually the head of Department for a discussion about target setting, performance benchmarks, and professional development needs. Performance coaching takes place throughout the year and more so during a formal mid-year review where the reporting officer meets with the teacher to discuss progress, share concerns and provide feedback and support.

In the performance evaluation held at the end of the year, the reporting officer conducts the appraisal interview and reviews actual performance against planned performance. Teachers also use their year-end review forms to indicate their career aspirations. Supervisors also have an opportunity to weigh in on the direction they think the teacher should pursue. It is indicated in the review form that supervisors rate teachers on their "current estimated potential," which is the highest grade they think that a teacher can achieve prior to retirement. Current estimated potential provides a formal way for supervisors to allocate additional responsibilities within teaching, to recommend promotions, or for those who are strong enough in the required competencies to move to a different career track if they decide.[65] This evaluation is based on discussions

with teachers, observation, and student performance data, as well as each teacher's contribution to the school and community, which reduces any subjectivity involved in the exercise.[66] The final assessment is reviewed and endorsed by the school principal.

Tied to the levels within each career track are specific competency levels to show both teacher and supervisor what comprises the next level of competence as well as what determines outstanding competence. An official from MOE said that during the review process, the competencies are "defined, highlighted, discussed, reviewed, and evaluated with the aim that the competencies can be manifested and nurtured in the teachers.[67] The various competencies articulated provide guidance for teaching professionals to identify areas of improvement and to continually develop effective teaching practices which correlate with career progression.

NEW ZEALAND

New Zealand has also recently re-structured its teaching and leadership career pathways, with full implementation expected to take place by 2017.[68] The New Zealand Ministry of Education has invested $359 million (NZD) (approximately $227 million (USD)) into this exercise, which includes a $10 million (NZD) (approximately $6.3 million (USD)) Teacher Innovation Fund, which will enable team-based, teacher-led research and development at a practical level, working within schools or across groups of schools.[69] Among the new positions created are:

Executive Principal: These will be highly-capable principals with a proven track record, who will provide leadership across a community of schools while remaining in their own school. Each will work with around ten schools from primary through to secondary, and mentor the other principals in these schools. Executive Principals will be freed up for two days a week to work with the other schools in their community. They will be paid additional allowances in recognition of their new responsibilities. Their own school will also receive funding to backfill their role for the time that they are working with other schools. It is anticipated there will be around 250 of these roles when the rollout is completed.

Change Principal: These leaders will be employed to lift achievement in schools that are struggling. Principals appointed to these roles will be paid an additional allowance on top of the salary the recipient school offers. This will encourage great principals to select schools based on the size of the challenge rather than the size of the school. The roles will be fixed term (three to five years) and will be particularly focused on lifting student achievement. It is anticipated about 20 of these roles will be needed each year.

Expert Teacher: These will work with Executive Principals, and will include experts in areas like maths and science, digital technology and literacy. They will work inside classrooms, including in other schools within their community of schools, with teachers to help lift teaching practice and improve student achievement. This role will be offered on a two-year fixed-term basis and be linked to specific objectives for student achievement. There are likely to be around 1,000 Expert Teachers when the initiative is fully in place.

Lead Teacher: These will be highly capable school teachers, with a proven track record, who will act as a role model for teachers within their own schools and the other schools in their community of schools. Their classroom will be open for other teachers, including beginning teacher, to observe and learn from their practice. It is anticipated there will be around 5,000 Lead Teachers when this initiative is fully implemented.

Apart from the new positions highlighted, New Zealand has in recent years implemented a flatter school management structure which involves a greater number of teaching professionals in the "middle management" level. For example, beyond Heads of Department, schools tend to have subject leaders, heads of faculties, guidance counselors, deans, pastoral leaders, student/study support coordinators and resource teachers. Many middle managers are also encouraged to take on more important leadership positions as they progress in their careers.

In this respect, the New Zealand Ministry of Education has also launched the National Aspiring Principals Program (NAPP) which is led by Te Toi Tupu Leading Learning Network (a consortium of providers, contracted by the Ministry of Education, and coordinated by Waikato University), and has been in operation for about half a decade at present. This is a year-long program aimed at developing future principals with a series of modules and activities including personalized inquiry coaching sessions with facilitators, shadowing leadership in another school, as well as four online modules of work.

Like the Singaporean model, the New Zealand system recognizes the importance of nurturing specialized expertise in various domains of leadership and teaching. Furthermore, the type of the changes in the New Zealand model also reflect the needs of its system – for example, instituting Executive and Change Principal positions to lead the develop of weaker schools, and mid-level positions to enhance school management. Hence, the development of career structures can serve to meet the aspirations of teaching professionals while having real impact in promoting better school management and increased student achievement at the same time.

5 • PROFESSIONAL DEVELOPMENT AND CONTINUOUS LEARNING

Overview: The importance of professional development

As the complexion of society changes, with information growing at an exponential rate, major cities become increasingly multi-cultural and swept up in technological advances transforming communication and relations, it becomes imperative that teachers cannot expect to use only the skills sets and content knowledge acquired at the initial teacher preparation phase. In this regard, continuous professional development is now a necessity and not merely a luxury.

It is pointed out that continuous professional development serves a range of specific purposes, including the following:[70]

- Updating individuals' knowledge of a subject area in light of advances;
- Updating individuals' skill sets in light of developments in pedagogy and new learning environments;
- Enabling teachers to make relevant changes to curricula and teaching practices; and
- Facilitating exchange of information and expertise among those in the teaching profession.

In this section, we discuss studies and statistics on professional development programs around the world, before going in-depth into some of the types of professional development processes available in top-performing countries. We discuss the merits of these, rounding off with case studies of two of the leading cities with premier professional development structures: Shanghai and Hong Kong.

Statistics on professional development programs[71]

Availability: Professional development programs range from one-off workshops to longer-term courses, as well as more extensive, personalized and hands-on induction and mentoring schemes.

Induction: The OECD Teaching and Learning International Study (TALIS) 2013 results note that around 75 percent of

teachers work in schools where informal induction programs are offered. In terms of formal mentoring programs, these are almost universally available in a number of countries surveyed, including the Netherlands, Alberta (Canada), Flanders (Belgium), Australia, Malaysia, the UK and Singapore. On the other hand, such formal programs are less readily available in countries such as Mexico, Chile, Romania and the Czech Republic.

Mentoring: On average, less than ten percent of teachers appear to be enjoying the support of a mentor. In countries such as Israel, Singapore, Malaysia, Japan and Abu Dhabi (UAE), more than 20 percent of teachers report that they have assigned mentors, though this figure is less than ten percent for countries such as Sweden, Estonia, Chile, Denmark, Portugal, Latvia and the Czech Republic.

Courses/other events: 77 percent of teachers reported that they had participated in at least one course or workshop in a year, 44 percent reported that they had attended a conference or seminar, and 37 percent reported participating in some form of a teacher network.

Participation: While professional development programs may be available, this does not necessarily or naturally lead to maximum participation in such activities. TALIS notes that on average, only 50 percent of teachers participate in formal induction programs. For a number of countries, the difference between access to and participation in formal induction programs is noticeably stark. For example, in Iceland, 60 percent of lower secondary teachers with less than three years' experience appear to have access to formal induction programs, but only around 20 percent participate in them. In the Netherlands, access is between 80-100 percent though participation is closer to 60 percent.

Barriers to participation: The main barriers to successful participation appear to be conflicts with work schedules (the reason just over half of teachers surveyed cited), as well as a lack of incentives to participate. Other factors include the expense of such programs (which some teachers are expected to bear in part or full), lack of relevance in programs offered, lack of time due to family commitments, and lack of employer support. The 2013 Eurydice Report also notes that only ten countries surveyed provide teachers with financial allowances for continuing professional development.

Efficacy of professional development programs: While it appears that most teachers recognize the utility of such programs, some report that programs do not meet their pedagogical needs. Ninety

percent of teachers in TALIS-participating countries report that professional development activities with a focus on either subject knowledge or pedagogical skills had a moderate to large positive impact on their teaching, while the top professional development needs cited by teachers included teaching students with special needs, information and communication technology-related skills, student behavior and classroom management, teaching in multi-cultural settings and approaches to individualized learning.

Recent studies on optimal professional development approaches

Recent academic literature also points to new insights in professional development approaches. Some of the latest literature is outlined in the table below:

Table 5: Recent selected academic studies on professional development

Study	Main conclusions
OECD (2015)[72]	While more teachers participate in non-school than school embedded professional development (i.e. teacher learning that is embedded in the school context and in which teachers collaborate with their colleagues and focus on problems of practice), school embedded professional development has reportedly more impact on teacher practice (including understanding of subject field, curricula, pedagogical competencies, classroom management etc.) across all countries surveyed.
Dengerink, Lunenberg and Kools (2015)[73]	What and how teacher educators prefer to learn depends on the stage of experience and professional development they are at. For example, school-based teacher educators with less than seven years of experience feel more need for structured learning arrangements such as supervision, peer-coaching or participating in courses for teacher educators. Those with seven years of experience or more tended to prefer learning by reading professional literature, attending conferences or participating in projects, as well as having conversations with colleagues from similar backgrounds; they report less need for structured peer-coaching.

Study	Main conclusions
Cordingley (2015)[74]	Effective professional development involves making use of specialist expertise, giving and receiving structured peer support using collaboration, undertaking sustained enquiry-oriented learning over a length of time, learning to explore research evidence about pupil outcomes and observing teaching and learning experiences, seeking out leadership support and taking responsibility for creating opportunities for professional learning within day to day school life.
McMahon, Forde and Dickson (2015)[75]	Professional learning needs to be re-conceptualized so that the concentrated focus and pressures of learning in the initial teacher preparation phase are distributed through an extended induction phase and developed through a career-long process, in which collaborative practices enable teacher professionals to engage with wider issues and generate their own solutions.

Approaches to professional development across the globe

Given the increasing awareness of the need for professional development, many top-performing countries have developed a range of professional development activities that run the gamut of one's long-term teaching career. The main types of activities involve a structured induction phase, continuous mentoring and observation, peer collaboration, traditional workshops and courses, and action research, coupled with school support in freeing up time for participation in these activities. The table below draws upon examples from across top-performing countries which have utilized some of these activities.

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THE TEACHER MUST, IN A SENSE, BE THE MODEL LEARNER. HE OR SHE SHOULD HAVE A THIRST FOR CONTINUAL LEARNING AND IMPROVEMENT. THE TEACHER WHO CEASES TO LEARN WILL CEASE TO TEACH EFFECTIVELY. TEACHERS, HOWEVER, ARE OFTEN AND UNDERSTANDABLY BURDENED WITH CONFLICTING PRIORITIES AND ENDLESS EXPECTATIONS. POLICYMAKERS NEED TO PROVIDE TEACHERS WITH THE SPACE AND RESOURCES FOR PROFESSIONAL DEVELOPMENT TO TAKE PLACE. THIS ENTAILS SETTING ASIDE TIME FOR REFLECTIVE THINKING, PROFESSIONAL CONVERSATION, COLLEGIAL LEARNING, RESEARCH AND INNOVATION. AT THE SAME TIME, THESE ACTIVITIES CAN BE INTEGRATED WITH A TEACHER'S DAY-TO-DAY DUTIES. ACTIVITIES LIKE MENTORING FOR BEGINNING TEACHERS, AND PARTICIPATING IN NETWORKS OF PROFESSIONAL LEARNING COMMUNITIES, BUILD ON A TEACHER'S CLASSROOM EXPERIENCE, RATHER THAN TAKING THEM AWAY FROM IT.

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Table 6: Types of professional development activities across countries

Type of activity	Example
Induction	• Induction is the first phase of in-service training and is important for developing a strong professional development culture. • Ontario's New Teacher Induction Program is known to be comprehensive in orienting teachers to the school and providing mentoring and stage-appropriate training • The NTIP is mandatory for new teachers and includes training on classroom management, assessment, parental communication, literacy and numeracy teaching and teaching diverse learners • The NTIP is one year long though mentoring may continue thereafter • The NTIP is well-subscribed with 92% of first-year teachers in regular teaching positions reporting participation
Observation and mentoring	• A well-structured mentoring program is important for providing one-on-one coaching and constructive feedback • Singapore takes a structured approach to mentoring by instituting a mentoring period in which beginner teachers have to attend relevant courses and are given a lighter workload • They are observed by grade level chairs, subject heads, and heads of department • Mentors are also trained through the Skillful Teaching and Enhanced Mentoring Program • In the structured program, roles are designated to Mentor coordinators (for the school's entire mentoring program), Mentors (experienced senior teachers who guide mentees generally) and Specialized Mentors (for specific skill sets) • Schools are given flexibility to choose between generalist and specialist mentoring models, or some combination of both
Collaborative learning	• Shanghai (see case study below) and Singapore are good examples of how collaborative learning communities have been organized and sustained • Singapore established a Teachers' Network in 1998 which has since evolved into the Academy of Singapore Teachers • Subject Chapters and Professional Learning Communities have been instituted to initiate learning circles, teacher-led workshops, conferences, well-being programs, and internet-based communities for knowledge-sharing • For example, a learning circle involves a small group of teachers (e.g. 4 – 10) and a facilitator who identifies and works out solutions to common problems • The facilitator encourages peer learning, experimentation with teaching practices and development of professional friendships over time

Type of activity	Example
Workshops and courses	• Most countries still rely heavily on targeted interventions through workshops and courses, which will certainly remain relevant for content-heavy professional development (as opposed to skills training) • In Hong Kong, courses are offered through the Hong Kong Institute of Education, the University of Hong Kong, the Chinese University of Hong Kong and the Hong Kong Baptist University • Courses may take the form of short in-service programs to longer post-graduate degree programs • The Education Bureau sets official (though not mandatory) quantitative targets of 50 hours of professional development activities a year • In South Korea, in-service programs take place over a minimum of 180 hours which include specialized training in new areas such as the use of information technologies • The costs of such programs may be subsidized in part or whole using school funds subject to principal approval, which encourages participation
Action research	• Shanghai's model of integrated action research is exemplary for facilitating links between theory and practice • Throughout the induction phase and through the use of research study groups, teachers are encouraged to reflect on their teaching practices through engagement with academic literature, and are required to crystallize their experiences and insights in reflection -essays and academic articles (see further below)

Case studies: Shanghai[76] and Hong Kong

SHANGHAI

The Shanghai model of continuous professional development is undisputedly one of the best in the world. It involves many of the most effective types of professional development activities discussed above, and also manages to remove barriers to participation in a way that maximizes the efficacy of resources devoted to professional development.

In Shanghai, mentoring takes place continuously at various stages of one's teaching career. At the early induction stage (involving a 240-hour training requirement), teachers usually have two mentors - one for subject matter expertise and the other for general classroom management. These mentors have a range of experiences and can be subject-leaders, Master teachers, scholars or researchers.

Mentoring programs are comprehensive, beginning with a diagnosis of strengths and weaknesses, and progressing to classroom or demonstration class (i.e. classes at school or district level) observations and feedback. Mentors frequently guide mentees through the development of their lesson and teaching plans. Mentees are expected to reflect and record their learning process throughout the course of the mentoring program. In some cases, mentors also guide mentees in research projects undertaken at the school or district level, which may in some cases highlight novel research conclusions that are published as research articles in academic journals.

Additionally, some districts in Shanghai have a further assessment at the end of the induction phase which includes a formal appraisal of the teacher's progress. The overall evaluation may include a progress report as well as appraisals by supervisors. Teachers may also have to sit for multiple examinations by the teacher training institute of the relevant district and/or by the school. The final qualification must be approved by the district Education Bureau.

A virtuous cycle of continuous mentoring is promoted in Shanghai whereby teachers who progress to become more senior and established are given greater mentoring responsibilities across multiple classrooms. For example, outstanding teachers may be given mentoring roles across a number of schools within a district. Such teachers also conduct courses and workshops in group settings across schools in the district.

In some schools, the nature of mentoring evolves along the trajectory of a teacher's professional life. Junior teachers are mentored by senior advanced teachers, more senior teachers are mentored by district key teachers or subject leaders, and the latter are mentored by master teachers, researchers or master principals. While all programs involve a degree of reflection, class observation and feedback, and research projects, the intensity of certain activities changes over time as teachers become more experienced. For example, the frequency of class observations should decrease significantly in relation to top-tier teachers being mentored.

Shanghai's innovative teaching and research study groups facilitate peer learning and improved teaching in a bottom-up manner. Practically, teaching or lesson preparation study groups tend to meet up at regular designated times (for example, fortnightly, or five times a semester) to draw up lesson plans for topics to be taught in the course of a semester. These groups often involve teachers teaching similar subjects and at the same level of experience to encourage

more constructive exchanges of views. These lesson plans serve as guides for the trainee teacher as well as accountability mechanisms for post-teaching review. Such collaboration motivates teachers to learn best practices from their peers and sets top standards of teaching for novices to aspire to. Research groups are slightly different, and focus primarily on a research project aimed at improving student learning. The group members focus on exploring the literature in the area and testing different approaches to implementing improved practices. Members are required to write reflection papers and may be encouraged to publish their research. In some districts, collaboration in this area takes place at multiple levels, not only within schools but between schools – the Huang Pu District has a research union of 13 schools which share research resources.

Ultimately, trade-offs must certainly be made to make time for continuous professional development. Some of the decisions that Shanghai schools have made include expanding class size but decreasing number of classes and including time spent in mentoring as part of the time requirements for continuous professional development. Other incentives to participate in professional development programs include upgraded qualifications, study leave and travel, research funding, promotion and other work-related benefits.

Shanghai's professional development system is the culmination of a very well-designed program embodying heavy emphasis on mentoring, feedback and reflection, as well as removing barriers to participation. These factors ensure that teachers are fully invested in continuous learning and make full use of the resources available to meet the goals of these professional development programs.

HONG KONG

Over the last two decades Hong Kong has raised the quality of her teachers through improving teacher education and continuous professional development (CPD). A number of universities in Hong Kong are actively involved in providing formal professional development courses. These universities have high standards of scholarship in teaching and research and include universities such as the University of Hong Kong, Hong Kong Institute of Education, the Hong Kong Baptist University and the Chinese University of Hong Kong. Courses range from short, in-service education programs to longer post-graduate degree programs.

The Education Bureau (EDB) has encouraged CPD for some time, as the Advisory Committee on Teacher Education and Qualifications

(ACTEQ) has recommended since 2003 that all teachers, regardless of their post, should engage in 150 hours of CPD over a three-year period. It is stipulated that in a three-year cycle, not less than 50 hours should be spent on structured learning (for example: short courses, seminars, workshops and degree-awarding programs) and not less than 50 hours on other modes of continuing professional development. The "other modes" include a very broad range of activities such as sharing of good or innovative teaching practice within and across schools, mentoring and serving in education-related committees. The remaining hours can be freely apportioned at individual teachers' own discretion.

The provision of professional development in Hong Kong include the following:[77]

- Structured learning with activities such as attending professional conferences, seminars and workshops;
- Offshore study visits, for example to schools in the mainland;
- Advanced postgraduate qualifications in education;
- Professional collaboration, cooperation and sharing of practices and experiences;
- Mentoring from senior teachers to provide pastoral care and support to novice teachers;
- Action learning in the form of school-based projects;
- Research and publications on aspects of pedagogy; and
- Service to the professional and wider community in the form of membership of advisory committees, working groups, or education-related committees under non-governmental organizations.

More broadly, the ACTEQ has recommended that "schools should be developed as professional learning communities" and that "teachers' professional development should be regarded as an important force in school development".[78] Through engaging in inquiry, feedback and reflection, each teacher views his/her colleagues as learning partners. In the Hong Kong experience, this has helped to "exert a good influence on other teachers, cultivate a collective learning culture and atmosphere, and help activate the process of change".[79]

6 • ACCOUNTABILITY, PERFORMANCE MANAGEMENT AND EVALUATION

Overview

In this section we discuss the key policy issues as well as specific elements of design in the teacher evaluation process. Teacher appraisal is an important, and often challenging, issue to tackle. It is important to understand the purposes of appraisal, which range from providing formative feedback to summative evaluation. There are also different standards and modes of evaluation, which must be tailored to the purpose of evaluation. We discuss the use of value-added models in contrast with standards of teaching performance, and explore further the various modes of appraisal available (interviews, observations, portfolio maintenance and assessment, etc.). In this regard, we also explore three case studies of top-performing systems from California, Massachusetts and Singapore, which tend to employ a range of evaluation mechanisms to promote more accurate assessment and constructive feedback to teachers.

International statistics on the frequency, content and efficacy of teacher appraisals[80]

TALIS 2013 notes that the frequency of teacher appraisal differs significantly across countries. On average, about 13 percent of all teachers surveyed reported that they had never received appraisal or feedback from any source. Italy, Spain and Portugal appeared to have the highest proportions in this regard, with over 20 percent of teachers not receiving appraisal or feedback. The criteria used in teachers' appraisals and feedback also shows some variance across countries. On average, items showing high to moderate importance include: relations with students; knowledge and understanding of subject matter; classroom management; knowledge and understanding of instructional practices; student discipline and behavior; work relationships with colleagues; direct appraisal of classroom teaching; student feedback on teaching and innovative teaching practices.

While it is difficult to draw globally applicable conclusions, TALIS does observe that on average, there is a significant perceived impact of appraisal upon teaching. Appraisal and feedback is perceived to have moderate to large positive changes in improving student performance (over 40 percent); classroom management practices (slightly under

40 percent); knowledge of instructional practices (slightly under 40 percent); teaching improvement plans (slightly under 40 percent) and student discipline (slightly under 40 percent), among other things. These results reinforce the importance of giving thought to the evaluation process, rather than treating it as a perfunctory exercise. This leads us on to the key issues in policy design.

Key policy issues

Formative and summative evaluation: Teacher evaluation is ultimately for developmental/formative and accountability/summative purposes. The former seeks to identify an individual's strengths and weaknesses in order to facilitate improvements in teaching practices and the kinds of professional development activities conducive for this. In contrast, summative evaluation focuses on past performance for the purpose of determining career advancement, renewal and tenure, bonuses, or in some cases, responses to underperformance. While they are not incompatible, some thinking should be devoted to designing the nature of the evaluation process with the type of evaluation in mind. For example, where a teacher is concerned with appraisal directed to developmental purposes, he or she would be more willing to discuss blind spots and areas for improvement. On the other hand, where summative evaluation is concerned, teachers will naturally gravitate to putting their best foot forward. Taking self-evaluation tools and teaching portfolios as examples of evaluation processes, it might be observed the efficacy of such processes would differ depending on the type of evaluation. Where it is not made clear that the purpose of self-evaluation is formative, respondents may assume that it carries performance management consequences and omit to disclose areas that would facilitate discussion on improved teaching practices.[81]

Career-long perspectives on performance management: In addition to summative and formative evaluation, evaluation should also take into account the stage of career development. Appraisals during probation and subsequent career development should be adjusted according to the context, such that a "continuum of appraisal approaches" is provided.[82] For example, higher-performing systems tend to incorporate sustained probation periods (for example, up to three or four years in cities such as Boston and Chicago), which are assessed for the purposes of becoming eligible for a permanent teaching position.

In South Korea, appraisals are developed for a range of purposes including professional development, general performance management and special incentives for additional or specific

responsibilities taken on. For example, under Korea's Teacher Appraisal for Professional Development program introduced nationally in 2010, each school has an appraisal management committee that assesses individual teachers' written professional development plan, appraisal results (included peer reviews), and produces a synthetic report with a number of key features including overall results of strengths and weaknesses, teachers' demands for training, implementation plans to accommodate professional development, and various budgeting proposals.

Some systems tie summative evaluation to a formal teacher-certification system that is used across cities or states. For example, the US is well-known for its National Board for Professional Teaching Standards (NBPTS). The 2014-15 Guide to National Board Certification notes that over 100,000 teachers across 50 states have achieved the certification[83] (which is valid for ten years). The certification involves a voluntary, performance-based, peer-review process where teachers provide a portfolio of work (including a video of a lesson) and undergo various exercises. Teachers are assessed against elaborate teaching standards reviewed by experts as well as teachers and issued in line with the NBPTS core propositions, including commitment to students and learning, knowledge of subject matter and pedagogy, and continual professional learning and systemic thinking about practice.

Value-added models versus standards-based evaluation:
One particularly important debate in teacher policy concerns the use of what experts have called value-added models for assessing teacher effectiveness, which essentially tie the performance of a teacher to student test score gains from one year to the next. Darling-Hammond and others have provided persuasive critiques of such approaches to evaluating individual teachers, favoring more holistic standards-based approaches such as the NBPTS referred to above. The main criticisms are that:[84]

- Value-added models are highly unstable and vary substantially from class to class and year to year. They depend on the types of statistical methods used and the types of tests issued to students.

- Crucially, they depend on the background of students assigned to their classes (teachers who have students facing various familial challenges such as low income or different language backgrounds, or other learning disadvantages such as special needs, tend to have their efficacy poorly estimated).

• They cannot accurately control for the various influences of student progress, as no single teacher or factor can account for any demonstrable gains in learning. (For example, language skills taught in one class may provide an impetus for demonstrable gains in related classes such as literature or the humanities.)

Specific elements of the evaluation process

Standards of evaluation and particular aspects being appraised: Given the problems with value-added models, most countries favor a multi-faceted approach to evaluating teachers. The starting point for such approaches involves the articulation of clear standards of good teaching which all teachers can be meaningfully measured against.

In the US, quite a number of states have adopted the Common Core State Standards (CCSS) for learning, which are the learning goals for what students should know and be able to do at each grade level from kindergarten through 12th grade. Education policymakers in 48 states came together to develop these standards, and currently 43 states have voluntarily adopted and are working to implement the standards. Such standards can assist in aligning learning with teaching standards by indicating what teachers should be expected to do in facilitating student learning.[85] The Interstate New Teacher Assessment and Support Consortium has adjusted its licensing standards to reflect the kind of teacher competencies required to implement the CCSS.

The OECD notes that most countries use uniform or central standards as a reference point for probation, regular appraisal and registration purposes. For example, Australia has national teaching standards which articulate descriptions of professional duties, and are used for all stages of appraisals. Some systems such as those of Finland, Denmark, Italy and Spain do not appear to have such standards implemented top-down or in a uniform fashion for any stage of appraisal. Others, such as Sweden's, implement uniform standards for some purposes (such as probation) but leave regular appraisal to the school level.[86]

The content of such standards will certainly differ across countries and even across states; however, the core benchmarks can be expressed as contributions to student learning, and contributions to the school as a whole and the work of colleagues.[87] Within these areas of contributions, specific activities can be evaluated. For example, student learning can encompass planning and preparation, instruction, class environment and management,

and related professional responsibilities. Contributions to the school and colleagues can be evaluated against sub-categories such as working in teams on projects, managing leadership roles and building partnerships for learning. OECD notes that systems will frame these elements differently depending on context; for example, New Zealand's multicultural environment has led it to include the promotion of inclusive learning environments and responsiveness to diverse linguistic and cultural backgrounds as areas against which teachers are evaluated.[88]

Various modes of evaluation and feedback: Knowing what to evaluate is but the first step. Just as important is the "how to" question. Academic consensus suggests that it is important to have a wide range of assessment modes and multiple instruments to ensure accuracy and to promote professional development following formative assessment.[89] The following modes of evaluation are among the most commonly observed in many high-performing countries, though it is not necessary to use all of the given trade-offs between the benefits of good appraisal and the resource costs of implementation mentioned below (e.g. training of evaluators and time taken by senior educators to conduct multiple appraisals):

- Internal/external classroom observation: This is one of the most popular modes of evaluation, given that it provides the opportunity for first-hand experience of a teacher's key competencies in his or her interaction with students. This is usually undertaken by senior teachers, department heads or principals. While the format of observation may seem self-explanatory, it is important to include pre and/or post observation discussions to put teachers at ease as well as provide constructive feedback for teaching improvement. For accountability and documentation purposes, some countries (such as Chile) will use a video-recorded version of the class for evaluation purposes.

- Peer observation: In addition to observation by superiors, formative evaluation is often assisted through peer observation and feedback, which facilitates experimentation in teaching practices and reveals blind spots which early career teachers may not have identified as yet. Peer observation may also encourage a culture of sharing and informational exchange within the school setting. Thirteen states in the US have implemented forms of Peer Assistance and Review (PAR) which originated in Toledo, Ohio as a partnership between school boards and unions. The PAR format generally involves the

engagement of consulting teachers who act as evaluators and mentors, and who design support and progress plans for individual teachers, across the domains of designing instruction, instruction, classroom management, assessment and professional development.[90]

• Setting of performance objectives and self-evaluation: One important component of appraisal involves measuring an individual teacher's performance against individualized objectives set in conjunction with the school management. The process of goal-setting is important in tailoring general standards to individual teacher's circumstances and articulating in concrete ways the improvements expected of teachers in qualitative and/or quantitative terms. Goal-setting also promotes teacher reflection on specific areas identified for progress which the teacher feels particularly compelled to work on. In relation to goal setting is teacher self-appraisal, which is used in most countries as part of regular performance management (i.e. after probation). Self-appraisal closes the loop with goal-setting and is critical for promoting reflection on areas that fall short of general teaching standards (even those not associated directly with personal goals).

• Interviews: Performance management and reviews are commonly done through a formal opportunity for dialogue, which usually involves annual interviews conducted by a member of the school leadership team. This provides a direct and personalized way of communicating feedback to teachers.In Victoria, Australia, such interviews and reviews are part of the annual cycle of planning, mid-cycle review, and assessment undertaken every year. This is framed by Victoria's Department of Education and Early Childhood Development, which has come up with a Performance and Development Culture framework incorporating the above-mentioned cycle of performance review.

• Portfolio maintenance: In a number of countries such as Scotland, UK and Singapore, teachers are required or encouraged to maintain a portfolio which complements self-appraisal. Portfolios may include teaching materials, lesson plans, samples of student work and reflections. For this to work in an efficient manner, teachers should be continuously updating their portfolios without spending too much additional time on administrative tasks. Hence, policymakers also have a role to play in designing the requisite portfolio components to include materials and documents that

teachers are already using as part of their lesson planning, instruction and reflection, and in ensuring that any additional time spent is geared towards organizing and presenting the already documented information in an accessible manner.

• Student/parental feedback: While student feedback is usually associated with institutions of higher learning involving adult learners who are presumably better able to reflect on their own learning experience, recent studies such as a 2011 report by the Grattan Institute[91] suggest that students are able to report on teachers with a high degree of reliability and that teachers do use student feedback to identify weaker aspects of teaching. Naturally, student feedback should be used with a measure of caution and guidance, since the quality of feedback may differ depending on the type of students involved (for example, younger students may give generous ratings without having very constructive qualitative comments). Parental feedback is certainly less common across countries for summative assessment, as parents do not generally have first-hand experience of the classroom and tend to have their views shaped by their children's perceptions of their learning experience. Parental feedback could, however, be useful for narrower indications of teaching performance, such as a teacher's ability to relate to parents and students and other interpersonal skills.

• Evidence of student learning and performance: Despite the controversies over value-added models of teacher evaluation, this is not to say that evidence of student learning is to be disregarded entirely. After all, student learning is the ultimate aim of the teacher. While absolute test scores may be too narrow an indication of teacher performance, test scores can be used to compare student progress with different teachers, or using different instructional methods. It may also highlight systemic issues such as students of particular backgrounds or environments having problems learning under what would otherwise be considered regularly effective teaching practices. In this sense, evidence of student learning is very important for formative teacher evaluation, and gives teachers very useful data on how aspects of the curriculum can be improved.

TEACHER EVALUATION FACILITATES BOTH ACCOUNTABILITY AND DEVELOPMENT. ACCOUNTABILITY IS IMPORTANT TO REMIND TEACHERS OF THEIR PRIMARY ROLE IN HELPING STUDENTS ACHIEVE LEARNING GOALS. AT THE SAME TIME, EFFECTIVE APPRAISAL SHOULD EMPHASIZE A "DEVELOPMENTAL" RATHER THAN A "DEFICIT" MODEL. A GOOD EVALUATION SYSTEM MAKES USE OF A VARIETY OF APPROACHES SUCH AS FEEDBACK FROM EXPERTS AND PEERS, AND SELF-MONITORING TOOLS FOR TEACHERS. POLICYMAKERS AND SCHOOL LEADERS SHOULD ALSO SET CLEAR GOALS AND STANDARDS. MOREOVER, ALL TOP-PERFORMING SYSTEMS EMPHASIZE CONTINUAL COACHING, GUIDANCE AND CONSTRUCTIVE FEEDBACK TO HELP TEACHERS IMPROVE OVER TIME.

Case studies: California, Massachusetts, and Singapore

Recognizing that there is no one perfect model of evaluation, we have decided to discuss a number of case studies in this section each embodying a number of the above-mentioned best practices: California, Massachusetts and Singapore.

CALIFORNIA

In the Long Beach, California model, teacher evaluation takes place through observations on performance against the California Standards for the Teaching Profession. These standards guide initial teacher licensing as well as evaluation in many districts. Standards are articulated across the domains of 1) engaging and supporting all students in learning, 2) creating and maintaining effective environments for student learning, 3) understanding and organizing

subject matter for student learning, 4) planning instruction and designing learning experiences for all students, 5) assessing student learning and 6) developing as a professional educator. In each standard, there are sub-categories rated across four levels from unsatisfactory to exemplary. Each sub-category is expressed in a fairly concrete and observable way, such as "the teacher uses a variety of instructional strategies and resources that respond to students' diverse needs".

In relation to the mode of evaluation, teachers and administrators often discuss and agree on a range of tools including classroom observation, curriculum-related tests, student self-evaluations, discussions and feedback from students and parents, documentation of students' past learning and work over time to demonstrate growth, as well as action research on teaching. It is noted that the Long Beach model intentionally involves the individual teacher in discussing, interpreting and using student assessment results, which contributes to collaborative learning and improvement in teaching practices.[92]

MASSACHUSETTS

Massachusetts, another state in the US, is also well-regarded for taking a holistic approach to evaluation. While expressed slightly differently from the Long Beach model, the standards articulated tend to revolve around curriculum, planning and assessment, teaching diverse students from various backgrounds and creating an effective classroom environment, family and community engagement, and professional development and culture.

The Massachusetts system uses multiple measures of evaluation, including data on student learning such as progress on assessments measured against state standards as well as individualized learning goals. Other forms of evaluation include classroom observation and judgment, professional contributions and development, outreach to families and surrounding communities, as well as student and staff feedback to administrators.

Importantly, the measures are not set in stone as quantifiable components with a decided weighting, but rather, a qualitative assessment is undertaken where the abovementioned categories of evidence of teacher efficacy and performance are measured against validated standards of teaching competence.

SINGAPORE

In Singapore, teacher performance is evaluated in a holistic fashion using multiple measures along different stages of a teaching professional's journey. The key tool is the Enhanced Performance

Management System (EPMS) first launched in 2003. The EPMS states the skill sets and competencies expected at each career stage and within each career track referred to above (teaching, specialist and leadership track). Teachers are assessed based contributions to student development – not merely test scores but quality of learning, well-being and overall growth as reflected in co-curricular activities.

Importantly, the EPMS model is based on a 'developmental' rather than 'deficit' philosophy of evaluation. Hence, within an annual cycle, teachers start the year with self-assessment and goals for teaching, instructional innovation, professional training and development. These goals and benchmarks are discussed with reporting officers to ensure alignment with school and Ministry of Education (i.e. national) standards. Formal evaluations include a mid-year review and final evaluation, supplemented by informal evaluation meetings across the year. Meetings present opportunities to discuss solutions to problems or areas to work on in furthering a teacher's stated goals. The process is imbued with a degree of collegiality to ensure that junior teachers are open and responsive to interaction with senior teachers or department heads acting as reviews.

The EPMS itself documents these interactions, including summaries of relevant discussions between teachers and their reporting officers, and evaluations from the latter based on their observations and interactions. The EPMS hence provides consistently collated data on which the teacher can be annually assessed. Final evaluations also include a component of a teacher's current estimated potential, based on input from all stakeholders including supervising teachers, senior colleagues, reporting officers and principals. This estimate is indicated to help the teacher continually develop to meet and exceed their potential. It is also useful to enable school leadership to identify which teachers may have the capacity for future service or leadership roles.

The above case studies highlight the importance of setting standards for evaluating teachers at different points in their careers, using a wide variety of modes of evaluation for accuracy and constructive feedback, and going beyond a merely summative evaluation tied to value-added test scores of students.

7 • SCHOOL LEADERSHIP

Overview

Effective teacher policy requires visionary school leadership. Many of the innovations and insights concerning key elements of teacher policy, such as recruitment, continuous training and development as well as evaluation, require principals to appreciate the importance of policy reform and the skills to implement these insights in the contexts of particular school environments. To this end, effective school leadership certainly goes beyond efficient completion of administrative tasks. It requires school leaders to be selected and trained in new paradigms of instructional leadership and collaborative decision-making, and the creation of supporting structures at the systemic level for such leadership development. We discuss some of the most important trends and ideas revolutionizing school leadership in this section, ending off with a case study of Ontario's recent reform of its school leadership framework.

Recent studies on school leadership

TALIS 2013 provides a helpful survey of the activities to which school principals allocate their time and energies. On average, it is noted that principals spend 41 percent of their time on administrative and leadership tasks and meetings, 21 percent on curriculum and teaching-related tasks and meetings, 15 percent on interactions with students, 11 percent on interactions with parents, and seven percent on interactions with the community. Hence, a large part of principals' time (nearly two-thirds, on average) is spent on administrative and curriculum-related tasks.[93]

One particular observation relates to principals' involvement in what is known as "instructional leadership" activities, which are activities that support teaching and teacher development including, for instance, taking actions to support teacher cooperation in developing new teaching practices, and ensuring that teachers take responsibility for students' learning outcomes and improving their teaching skills. Simply speaking, the focus of this aspect of leadership is on improving instruction. While TALIS notes that the average reported figures for these activities fall generally within the "often" range (as opposed to "never or rarely", "sometimes" or "very often"), with 76 percent of principals reporting taking action to ensure that teachers feel responsible for learning outcomes and 69 percent reporting taking action to ensure improvement of teacher's teaching skills, this was certainly not a consistent figure.

In countries such as Finland, Japan, Norway, Sweden and Flanders (Belgium), more than half of the principals surveyed reported never, rarely or only sometimes ensuring that teachers take responsibility for improving teaching skills. In relation to the above, it is also noted that school leadership preparation programs sometimes do not include sufficient components emphasizing instructional leadership, with only one quarter of principals reported having undertaken preparation in instruction leadership.

Key elements of school leadership policy

Selection: Potential school leaders must be identified and groomed fairly early on in their careers. In the Singapore system, those with the desire and potential to progress to school leadership are placed on the leadership career track which allows them to progress from subject and department heads to vice-principals and principals, and even further to ministry positions in some cases. Hence, selection of school leaders is greatly facilitated through the creation of the career track process, which separates those on the teaching and specialist tracks, and enables those with aptitude to be trained and earmarked for leadership roles. Those looking to take up a principal position must also go through several rounds of interviews with senior management, including ministry officials, as well as go through a leadership situation exercise which is a two-day simulation activity to test their leadership competencies.

Training programs that integrate research and practice: Experts point out that good leadership programs, like teacher education programs, are characterized by research-based content, curricular coherence, problem-based learning methods, field-based coaching, and peer collaboration.[94] Singapore's Leadership in Education Program (LEP) is one model to follow. Launched in 2001 and run by NIE, it is a six-month full-time program to train potential school leaders. Participation is required prior to principals being posted to their schools. The LEP includes modules on all aspects of leadership, including how to craft a school vision and culture, management and business strategies for running schools, organizational thinking, and designing evaluation and assessment practices. The LEP also includes talks by the most senior and distinguished education professionals and officials, such as the Permanent Secretary for Education, Director General of Education and Director of Schools. Another unique aspect of the program includes a two-week international visit to other education institutions and organizations, as well as an industrial visit to interact with senior executives of Singapore-based multinational companies. These visits expose

future principals to new perspectives which they are expected to reflect on critically and incorporate into their own philosophy of school leadership.

TALIS NOTES THAT INSTRUCTIONAL LEADERSHIP WHICH FOCUSES ON DEVELOPING TEACHING AND LEARNING IS ONE OF THE MOST IMPORTANT TASKS OF SCHOOL LEADERSHIP. INSTRUCTIONAL LEADERSHIP IS CORRELATED WITH HIGHER LIKELIHOODS OF PROFESSIONAL DEVELOPMENT PLANS BEING IMPLEMENTED, MORE INVOLVEMENT IN TEACHING OBSERVATIONS, HIGHER LEVELS OF MUTUAL RESPECT AMONG COLLEAGUES, AND GREATER JOB SATISFACTION. THE STARTING POINT FOR IMPROVING INSTRUCTIONAL LEADERSHIP IS RAISING AWARENESS OF ITS IMPORTANCE AND INCLUDING IT AS PART OF PRINCIPAL TRAINING. SCHOOL LEADERS MUST REALIZE THAT LEADERSHIP IN INSTRUCTION WILL HAVE A DIRECT POSITIVE IMPACT ON STUDENT LEARNING OUTCOMES AND STUDENT ACHIEVEMENT.

Instructional leadership: TALIS notes that instructional leadership which focuses on developing teaching and learning is one of the most important tasks of school leadership. Instructional leadership is correlated with higher likelihoods of professional development plans being implemented, more involvement in teaching observations, higher levels of mutual respect among colleagues, and greater job satisfaction.[95] The starting point for improving instructional leadership is raising awareness of its importance and including it as part of principal training. School leaders must realize that leadership in instruction will have a direct positive impact on student learning outcomes and student achievement. Particular instructional activities can be actively promoted by all principals, such as encouraging

and coaching teachers to use improved research-based teaching strategies, and establishing processes of review to hold teachers accountable for students' learning experiences and environments.

Delegation and collaborative decision-making: Effective school leadership can also be enhanced through delegation and collaboration, sometimes called "distributed" leadership or "teacher" leadership. This involves empowering teachers to participate in decision-making processes regarding various aspects of school governance, in particular, curriculum and teaching-related matters within their immediate purview. This form of leadership tends to enhance teachers' confidence in their abilities and practically helps to alleviate some of the burden imposed on principals and vice-principals. For example, TALIS observes that an average of 61 percent of principals report sharing responsibility for managing student discipline policies and 52 percent report sharing responsibility for assessment policies. Generally, principals share responsibilities for selecting learning materials (45 percent), deciding courses to offer (52 percent) and determining course content (35 percent). While there are certainly wide variations across countries, countries looking to be top performers should consider developing a collaborative culture of leadership which in the long-run facilitates professional development on the ground and greater job satisfaction for both teachers and school leaders.

Principal evaluation: As with teachers, evaluation ensures that proper accountability and feedback is provided to school leaders. However, given the level of autonomy school leaders have and the highly context-specific nature of the challenges they have depending on the school environment they are expected to lead, principals have to be assessed in ways that take into account progress made in specific identifiable areas for intervention. In Finland, principals often have results-based agreements with the municipality outlining the expectations and targets for school leadership to achieve. Targets are often both qualitative and quantitative, for example, implementing new curriculum innovations, or increasing participation of teachers in professional development programs. In Ontario, principals set their goals reflected in a performance plan which is used to track and measure annual progress made by the school leadership across a number of domains (see further below).

Case study: Ontario, Canada[96]

Ontario provides an excellent example of comprehensive school leadership development embodying many of the elements highlighted above.

System-wide and board-specific infrastructure: Ontario Leadership Strategy and Board Leadership Development Strategy

The lynchpin of Ontario's system-wide leadership development infrastructure is the Ontario Leadership Strategy (OLS) launched in 2008. The OLS aims to attract potential leaders, promote effective leadership practices, and develop leadership capacity and coherence in organizations.

The OLS provides each school district in Ontario with funding and support for the development of Board Leadership Development Strategies (BLDS). The BLDS in each district gives opportunities to those who are aspiring to leadership roles to realize their potential. More specifically, the BLDS looks to recruit and select leaders and ensure effective succession planning, ensure appropriate placement and transfer of leadership for system-wide improvement, develop leadership through mentoring, appraisal and various learning opportunities, and build coherence across various leadership training initiatives.

For example, under a BLDS, teachers would have various opportunities to shadow a practicing school leader, take on various leadership roles (such as department heads) for periods of time, participate in group mentoring activities, and take on funded research-projects for professional learning geared towards effective leadership.

Those under the BLDS will have opportunities to assess themselves against various checklists of competencies based on the Ontario Leadership Framework (OLF), which gives handles on effective research-based leadership. The OLF is tied to the OLS as it aims to provide a robust research foundation on which to base the elements of the OLS, ensures that Ontario leadership practices and personal leadership resources support the key goals of improving student achievement and well-being, and provides a common language and understanding for leaders to engage in discussions about effective leadership practices. The OLF is hence useful for all stakeholders, including those being groomed for leadership, those already in leadership to practice self-reflection and assessment, and those responsible for recruiting, selecting, developing and retaining new leaders.

In terms of implementation, the initial phase of the OLS implementation (2008-2012) focused on supporting districts to develop the infrastructure to begin implementation of OLS initiatives like mentoring, appraisal, and talent development. Since then, evidence has confirmed that such infrastructure has been established in the districts. Hence, the current phase focuses on self-assessment of the impact of the BLDS through

BLDS Impact Assessment and Planning Tools. The data collected is meant to enable districts to identify areas of intervention and strengthen the quality of leadership in their districts.

Training, accreditation and mentoring

Ontario school leaders are also required to undergo rigorous training for principalship positions. All principals and vice-principals are required to complete the Principals' Qualification Program (PQP) which consists of two parts (each 125 hours) as well as a practicum experience. The PQP is centered around the Ontario Leadership Framework and is a program accredited by the Ontario College of Teachers. Apart from the PQP, other requirements include a Masters or double-subject specialist degree, five years of classroom experience, and qualifications in three divisions of the school system.

In the city of Toronto which includes the Toronto District School Board (TDSB), the largest board in Ontario, the TDSB has articulated specific leadership competencies such as direction-setting, building relationships and people development, organizational development, leadership of instructional programs and securing accountability, which provides a framework for developing principals. Under the TDSB, applicants for vice-principal/principal positions must have completed the PQP and fill up a Notice of Intent to Apply to accord their school and system leaders a period of time to discuss the applicant's readiness. The superintendent would have to sign the said notice and meet with the applicant to review the selection process rubric. For principal positions, candidates additionally require vice-principal or district-wide coordinator experience of a minimum of two years.

As part of the training process in Ontario, principals and vice-principals are offered mentoring for the first two years which is funded by the Ministry of Education. This includes intentional matching to facilitate effective mentoring relationships, and involves the development of learning plans providing frameworks for the mentoring and feedback process to be carried out.

Evaluation and accountability

As with teachers, appraisal of school leaders is equally important. Principals and vice-principals tend to be appraised every five years through a principal performance appraisal process.

This process requires principals to set various goals, taking into account ministry, board, school, community and personal priorities. They are required to create strategies to meet these goals with the OLF in mind.

This would be reflected in a performance plan supported by an annual growth plan which collectively include details of these goals, methods and practices to achieve these objectives, and various indicators or benchmarks for progress.

Appraisal is then conducted at the relevant intervals against the goals set out by the school leaders. Where not up to par, support is commonly offered for improvement, including the development of improvement plans which provide time to take corrective or supplementary activities to meet the goals set out by the school leadership. The appraisal is documented through summative reports and ratings in standardized formats.

Succession planning

Part of the comprehensive planning framework provided by the BLDS includes succession planning strategies. Each BLDS steering committee must include a human resources representative. In this regard, districts would forecast supply and demand to ensure that the number of candidates ready to assume leadership roles matches present and projected demand, develop selection processes and assess candidate readiness for available roles. On a systemic level, districts also share with the ministry information on school progress resulting from changes in district leadership, and results of leadership transfers across schools, for better system-wide coordination.

Other collaborative/coordinated initiatives

Effecting harmonious and consistent system-wide leadership practices also requires the buy-in of all stakeholders and effective coordination from a bottom-up and not merely a top-down level. In this regard, the ministry works with various professional associations of school leaders, such as the Ontario Principals' Council, through a partnership initiative known as the Institute for Education Leadership. The IEL includes principals, supervisory officers of district school boards and ministry officials. It supports leadership by, amongst other things, commissioning research on effective leadership practices which is shared with members, and working on implementation strategies for ministry-initiated policies.

The Ontario reform model hence provides comprehensive training and support for developing school leadership across schools and across time (i.e. facilitating successful leadership handovers), while successfully ensuring inclusiveness in the development of its new leadership framework over the span of a relatively short period of time.

8 • TEACHER SYMBOLISM

Overview

What is teacher symbolism, and why is it important? Simply speaking, teacher symbolism relates to the symbol that teachers stand for in society. On a general level, we are concerned with the status of teachers in the community. Are they seen as professionals alongside occupations such as medicine and law? Is teaching a career that the young would aspire to? Do parents, guardians and the wider community respect teachers? The status of teachers is an issue that cuts across all areas of teacher policy, affecting recruitment, retention and job satisfaction on a day-to-day basis.

On more specific levels, teacher symbolism is not only about raising one's status, but deepening and widening the roles that teachers play in the formative years of their students' lives. Hence, policymakers should have a vision of the teacher going beyond the mere communicator of content knowledge or administrator of assessments, but also encompassing responsibilities as leaders and innovators in pedagogical thinking, inspirational role models, respected domain experts and custodians of societal values.

In this section, we explore the status of teachers across countries and discuss practical ways of enhancing teacher symbolism, rounding off with case studies of South Korea and Qatar, two countries where the status of teachers remains consistently high, with a view to drawing out lessons for other countries.

Studies on the status of teachers

One recent study, the 2013 Global Teacher Status Index produced by the Varkey Gems Foundation, conducted a very interesting survey of 21 countries (including top-performing countries such as China, Finland, Japan, Singapore, South Korea, UK and the US). The report looked at a number of questions including how teachers are viewed against other key professions, whether teaching was a "sought after" profession, what kind of profession teaching is considered "comparable to" in various countries, and the extent of pupil respect for teachers across countries. Both qualitative and quantitative data was collected on the above questions, and also aggregated into an index which sought to rank teacher status across all 21 countries.

Key findings showed that in some countries such as France, China and the US, primary school teachers were more highly regarded than secondary school teachers. In China, 50 percent of parents would encourage their children to become teachers, while the corresponding figure in Israel is only eight percent. Countries where parents would provide the most encouragement in this regard were China, South Korea, Turkey and Egypt, while Israel, Portugal and Brazil featured at the opposite end of the scale. Interestingly, in the US, Brazil, France and Turkey, teachers were most frequently compared to librarians, while in Japan people thought that teachers are most similar to local government managers. In China, teachers were closely compared to doctors; however, in the UK, less than five percent of respondents thought so. As for pupil respect for teachers, high scores were found in China, Turkey, Singapore, and Egypt. It appeared that in European countries surveyed, more respondents were of the view that pupils disrespected teachers than saw them with respect. China had the highest overall Teacher Status Index with the highest respect for secondary school teachers and the country in which parents would most likely encourage their children to become teachers.

Various country-specific studies also highlight the role of contextual factors affecting the status of teachers. For example, a 2014 Spanish study observed that perceptions shaped by mass media and political interest groups may inaccurately portray the teaching profession as lacking prestige, although a more accurate survey would show that teachers' prestige is on the "middle-to-high", rather than "low" end of the scale. Informed public discourse on the role of teachers would possibly contribute to the enhancement of their overall professional image.[97]

Another recent 2014 US-based study by Lankford, Loeb, McEachin, Miller and Wyckoff also found "encouraging evidence" that the status of teachers is improving. The authors analyzed 25 years of data on the academic ability of teachers in New York State, and observe that since 1999 the academic ability of both individuals certified and those entering teaching has steadily increased. The authors state that the "increased academic ability of entering teachers also indicates teaching's occupational esteem is on the rise...and thus the public's perception of teachers' job performance".[98]

Key policy factors in enhancing teacher symbolism

Building on cultural regard for teachers: In South Korea and Finland, teachers are deeply respected in society. In South Korea there is a

historically embedded culture of respect for teachers across all levels. Teaching is seen as the greatest professional contribution to society. In Finland it is well-documented that Finnish teachers are considered essential players in nation-building, and that teaching is viewed as the most popular profession among upper-secondary school graduates, leading polls of professions consistent with or ahead of doctors, lawyers and architects. While public opinion is to some extent a matter of historical forces, it is possible to improve the image, branding and status of the teaching profession in a matter of years with targeted campaigns and interventions (discussed below).

Making space for professional autonomy and trust: Finnish teachers are said to be accorded a significant degree of autonomy and trust. Practically, this translates into some measure of discretion in designing the learning environment, curriculum, course content and materials, assessment policies and resource allocation. Finnish teachers are thus respected as having the professional expertise of doctors, lawyers and architects in being allowed to exercise their own professional judgment. For example, while curriculum goals may be commonly set as baseline standards, teachers have some leeway to craft their learning environment to meet these objectives. They are actively involved in curriculum design and development without being bound by micro-managed accountability structures that would impede their decision-making and creativity. This translates into a widespread job satisfaction and a relatively high retention rate of 90 percent.

Quality-driven recruitment, selection criteria and training: In Finland the favorable perception of teachers is reinforced by the academic quality of the teacher education program (for example, requiring Masters degrees and encouraging further research-based qualifications, see above section on Initial Teacher Preparation and Accreditation Standards), which ensures that teaching is seen as intellectually challenging and rewarding. This is by no means limited to Finland. In the examples of Korea and Japan below, both of which include very stringent and competitive criteria for entry into the teaching force (including competitive examinations), teachers are likewise accorded much respect for their academic abilities. This is also facilitated by rigorous training programs that involve an element of research, such as the initial teacher preparation programs in Shanghai. The notion of teachers as "reflective practitioners" (a term often seen in the academic and policy discourse) embodies the image of a professional expert with a continually growing breadth of domain and pedagogical expertise, which again contributes to higher societal recognition.

Managing workload and general working environment: As with all other professions, the general working environment plays a part in teachers' perception of the desirability of the profession. These include workload, student-teacher ratios, additional duties, available resources and infrastructure. Such factors can be as influential as compensation, even if less easily correlated with attraction and attrition.

The 2013 Eurydice report noted that the student-teacher ratio in European countries was between ten and 15 pupils per teacher, with Lithuania, Portugal and Liechtenstein reporting ratios lower than eight pupils per teacher at secondary level, and the Netherlands, UK and Turkey having the highest corresponding ratios of between 16 and 17 pupils per teacher. Only a few countries tend to provide additional specialist teaching support (such as language therapists, educational psychologists, reading specialists, special needs educational staff etc.), which may impose additional burdens on the teaching force.

On the other hand, one should note that keeping teacher-student ratios low is not the panacea for ensuring better instruction or attracting more teachers. Some countries, notably Singapore and South Korea, have made a calculated trade-off to increase teacher compensation while increasing class size, which ensures that more money can be spent on each teacher, with the recognition that teacher quality is more important than class size in promoting effective learning. It is said that South Korea classes have an average of 30 students to one teacher, above the OECD average of 17 students to one teacher, yet without compromising quality instruction or job satisfaction since teachers are paid relatively more, in addition to being closely screened for job fit at the initial application stage.

In terms of workload, Finnish teachers can allocate more time to teaching than can those in many other countries. They have approximately 32 total working hours per week, and spend 21 hours teaching. In Japan, teachers have 54 weekly working hours, while in Sweden, the number is 42. Finnish teachers spend approximately six percent of their time on administrative work.[99] The relatively lower workload (both in terms of teaching time and administrative work) frees up quality time for teachers to focus on professional development and critical reflection, as well as making teaching attractive as it offers some work-life balance and professional autonomy.

Broader systemic vision for the role of teachers: Policy-makers can actively shape the perception of the teaching profession by constructing and endorsing the broader roles that teachers play in society. For example, in Singapore's Teacher Growth Model, Singapore teachers

are seen to play the roles of being custodians of the values of society, mediators and facilitators of learning, and transformational community builders in multi-ethnic and multicultural Singapore. By taking the step to set out the roles teachers are envisioned to have, the Ministry of Education and National Institute of Education also provide guidance on what teachers should aspire to in the local community. Societies with different needs, challenges and at different stages of progress will all require teachers, but the broader roles they are to play may differ accordingly. Policymakers would do well to construct such a coherent systemic vision.

National recognition for accomplishments of teaching professionals: Practically, some of the steps taken to enhance professional recognition can be top-down initiatives, such as public sector recognition through awards and honors (i.e. not merely financial incentives). These appeal to the intrinsic and altruistic motivations for people entering the teaching force, and not merely their extrinsic incentives to do so. In Singapore, the President's Award for Teachers was introduced in 1998 as the highest honor for teaching professionals, recognizing professional dedication to the holistic development of students. About 66 teachers have been awarded this honor from 1998 to 2014. The Caring Teacher Award was introduced in 1996 by Singapore's National Institute of Education, Ministry of Education, and ExxonMobil Asia Pacific Private Limited. It recognizes teachers who have displayed outstanding commitment to students and their learning.

Branding and marketing campaigns: Sometimes public perception can be influenced by effective branding and marketing campaigns to raise the profile of teachers, correct misperceptions about the profession (for example, if the public underestimates teacher compensation), and appeal to the motivations of those considering a career in teaching. The 2007 McKinsey report noted that the US Teach First and Teach for America have successfully created the image of an elite, non-mainstream, and altruistic teaching force. In the UK, the Training and Development Agency for Schools tracked public perceptions of its marketing campaigns and modified its marketing approaches (such as the content of its advertisements) to appeal to motivations of potential candidates, for example incorporating more messaging about its career progression opportunities in later advertisements.[100] Carefully managed interventions have the capacity to affect perception more quickly than the general ebb and flow of public opinion, which would be affected by a myriad of historical and socio-cultural factors.

WHAT DOES THE TEACHER SYMBOLIZE IN SOCIETY? WHETHER ONE SEES THE TEACHER AS STRICT DISCIPLINARIAN, OR DOMAIN EXPERT AND DEVOTED PROFESSIONAL, MATTERS. WHEN TEACHERS ARE SEEN AS PROFESSIONALS, YOUNG PEOPLE ASPIRE TO THE PROFESSION, AND THE EDUCATION FRATERNITY GROWS IN QUALITY AND FLOURISHES. POLICYMAKERS SHOULD HAVE A VISION OF THE TEACHER GOING BEYOND THAT OF THE MERE COMMUNICATOR OF CONTENT KNOWLEDGE OR ADMINISTRATOR OF ASSESSMENTS. TEACHERS MUST BE EMPOWERED WITH RESPONSIBILITIES AS LEADERS AND INNOVATORS IN PEDAGOGICAL THINKING, INSPIRATIONAL ROLE MODELS, RESPECTED SUBJECT-MATTER EXPERTS AND CUSTODIANS OF SOCIETAL VALUES. CHAMPIONING TEACHER SYMBOLISM INVOLVES ALL AREAS OF TEACHER POLICY RANGING FROM RECRUITMENT TO CAREER DEVELOPMENT PATHWAYS. MORE IMPORTANTLY, THERE MUST BE A SYSTEMIC EFFORT TO EXPRESS THE TEACHER SYMBOL THROUGH NATIONAL RECOGNITION.

Case studies: Korea and Qatar

SOUTH KOREA

South Korea regards its teachers highly, and this is reflected in various aspects of its teacher policy. Policymakers have constantly reviewed their approaches to teacher policy to remain relevant, as reflected in the 1995 Educational Reformation Plan, the 2001 Comprehensive Plan for Teachers' Professional Development, and the current decision to establish a total innovation plan covering all teacher policies. Kang and Hong[101] note that the salary of South Korean teachers has an economic power about 2.4 times higher than that of US teachers.

They concluded that "one often finds that some of the brightest and most ambitious graduates enter the teaching profession".

Stringent recruitment also ensures the quality of candidates; this in turn, improves the general perception of the teaching force. In order to become a teacher, applicants need to attend education courses run and managed by teacher education institutes, and acquire a teaching certificate relevant to a given category, namely, teachers (Grade 1 and Grade 2 which is dependent on the qualifying exams taken), assistant teachers, professional counselors, librarians, training teachers and nursing teachers. The teacher appointment examination in South Korea is a challenging process. Authorities invite and select competent teachers for all schools levels. Each local authority has a selection management committee supported by an advisory committee, which is in turn organized under the local board of education. The entire recruitment process is governed by stringent selection criteria. As the hiring process involves competition amongst outstanding applicants, the selected applicants are of a high quality, and viewed with respect for their achievements.

The structure of a teacher's job in South Korea explicitly accommodates its high demands and recognizes teachers as professionals. Kang and Hong compared the in-class teaching time between South Korea and United States and found that in-class teaching in South Korea is only 35 percent of the total teacher working time, whereas in United States, it is 80 percent of working time. This effectively allows South Korean teachers to have much more time for tasks other than in-class instruction. Although at the lower secondary level, the average class size in South Korea is 1.4 times larger than that in the United States (i.e. 36 and 24.9 students, respectively), South Korean teachers have much more time to prepare for classroom instruction and to fulfill other professional responsibilities.

Culturally, the identity of the teaching profession in Korea is strongly rooted in Confucianism. For instance, Confucian respect for teachers is epitomized in an old Korean admonition: "Don't even step on the shadow of a teacher."[102] This professional role and identity of a teacher is embedded deeply with Korean cultural values, and reinforced by the Confucian emphasis on academic excellence. As teaching is oriented to academic learning and requires higher education, in combination with the cultural respect that it receives, the teaching profession is socially recognized and preferred over other occupations. Thus the value of respect and social recognition outweighs that of monetary compensation for many Koreans and hence attracts highly qualified people to the teaching profession.[103]

QATAR

Qatar is investing in raising the status of its teaching profession. One of the important drivers in this dynamic is Teach For Qatar. Founded by Her Excellency Sheikha Hind bint Hamad Al-Thani, and officially launched in March 2014, Teach For Qatar is a local non-governmental organization (NGO) working as part of the solution to help solve the challenges Qatar's students face. It does this by placing exceptionally talented leaders into the independent school system through a two-year leadership development and teaching program.

Teach For Qatar (TFQ) has identified English, Mathematics, and Science as high priority subjects. Therefore it recruits and trains its Fellows (teachers) to specifically teach those subjects in the seventh and eighth grades. Starting with initial teacher preparation during Summer Institute (seven weeks) and continuing into the two years of the Fellowship through ongoing training and support, Fellows receive both pedagogical training and leadership development.

One of the important ways that TFQ raises the symbol of the teacher is by appealing primarily to the altruistic motivations of its Fellows, who are keen to embark on a life-long learning journey of personal growth and development as educators and leaders who inspire and transform students to achieve. In year one, Fellows focus on being effective leaders in the classroom for themselves and students. In year two, Fellows build on the first year and are further challenged and encouraged to take ownership of their own leadership development journeys beyond the classroom—to the school and community level, and as Alumni/ae.

In its recruitment and selection process, TFQ is keenly associated with high-performing, talented and yet public-minded individuals, as it takes only candidates with these qualities into its program. It looks explicitly for candidates who are fluent in both Arabic and English, fresh graduates or young professionals, academically distinguished individuals with demonstrable leadership skills and experience, proactive individuals driven by change and positive role models who seek to inspire the next generation of young people. TFQ's selection process is designed to ensure that it identifies candidates who have the greatest potential to become highly effective leaders in the classroom and beyond. The selection model is based on a holistic approach that takes into account each individual's unique experiences, challenges and accomplishments. The assessment is not on a relative scale – that is, candidates are assessed against a standard benchmark, rather than in comparison to each other. Approximately 13 percent of candidates who applied were offered the Fellowship in 2014, and nine percent

in 2015. Overall, Qatar Foundation and Qatar University provided the largest number of applicants among the candidate pool, thereby providing the largest number of Fellows for the 2015 Fellow cohort.

The rigor of TFQ's Fellowship program and the quality of its training further contribute to the positive view of its teaching fellows. The program begins with a seven-week Summer Institute, which comprises Initial Teaching & Leadership Training, where Fellows not only learn about and develop both pedagogical skills and essential soft skills for effective teaching and leadership (e.g. communications, self-awareness, visioning/goal-setting) but also teach sample lessons and activities to peers. The program also includes Initial Classroom Practice, in which Fellows plan, deliver, and gain feedback on lessons delivered to students at "Camp Qatar". All workshops, sessions, and training during Summer Institute are delivered almost entirely in Arabic by TFQ staff except for a few workshops (i.e. vocal presence/communications, and personality testing using the Myers-Briggs Type Indicator). For these, trainers are brought in to provide expertise and meet specific learning and development needs of Fellows. TFQ also invites individuals from the Qatar Supreme Education Council and/or the Independent School Systems to deliver sessions to introduce and orient Fellows to the independent school system. The initial Teaching and Leadership Development Training is delivered through a range of workshops, reflections and interactive activities. This program has been specifically designed to meet both the short and long-term teaching and leadership development needs of Fellows. It has been structured to meet learning objectives across the strands of the TFQ Teaching & Leadership Development Program.

Student survey responses[104] conducted also confirm that the initial reception to TFQ is positive. At least 70 percent of the students in the 12 TFQ 2014 Fellow cohort's classrooms gave favorable responses in the following areas in November 2014, which is within three months of teaching:

- Teacher holds rigorous expectations for learning and effort (72 percent)
- Teacher checks for and ensures student understanding (71 percent)
- Teacher ensures students have fully internalized learning (70 percent)
- Teacher values student inputs and ideas (70 percent)

The student survey results are relatively positive given that a significant majority of the students in the Fellows' classrooms provide favorable responses (agree or strongly agree) to questions in the categories mentioned above. Given that academic literature has suggested that these teacher characteristics and actions are predictive indicators for positive student outcomes, these results suggest that TFQ Fellows are doing well and are on the path to being effective teachers given that they had only been teaching for three months when the survey was administered.

On the whole TFQ is an example of how the image of teacher professionalism is improving in Qatar. It attracts quality candidates through a rigorous selection process, trains them holistically with a good mix of content and pedagogical skills, and provides necessary follow-up throughout the teaching journey. As discussed above, the high quality of teachers and their commitment to the wider cause of ensuring equity in education (in the particular context of TFQ) raises the image of teachers in the community and continues to inspire young people to follow in the footsteps of the inaugural cohort of TFQ Fellows.

9 • POLICY INTEGRATION, ALIGNMENT AND COHERENCE

Overview

Even if policymakers have crafted the best possible individual policies to address everything from recruitment to retention, resources are often wasted as a result of a lack of coherence across systems. This stems from a lack of communication, divergent interests, and failure to think from a systemic "big-picture" perspective about the implementation of these issues. While every system's stakeholders are constituted differently (for example, larger countries may have layers of municipal education authorities, or the presence of established unions of teaching professionals which changes the dynamics of policy-making), there are common principles that every system can apply to promote policy integration, alignment and coherence. We discuss these followed by case studies of Singapore and Ontario's systems which reflect these principles.

Promoting coherence: Key principles

Unity of vision with stakeholders playing distinct but complementary roles: It is important to ensure that key stakeholders are on the same page as to the goals of the education system, and their roles in achieving these objectives. Singapore is a good example of intentionality of purpose in this regard (explored further below). The Ministry of Education (MOE), National Institute of Education (NIE), and schools work together under an intentionally formulated and instituted "Enhanced Partnership Model". Each stakeholder has distinct roles in the formulation, bridging and implementation of education policies. Importantly, any potential inconsistencies between the roles and interests of each actor are reconciled with reference to broader goals that all parties are oriented towards.

Communication and collaboration between all stakeholders: Ontario provides a very good example of initiatives which have been created with the above considerations in mind. For example, the Ontario Ministry of Education facilitated the genesis of the "teaching-learning critical pathway" work in 2010, in which schools and districts across the province define areas of interest for improvement and work in using data and student feedback to develop and embed "big ideas" in their daily instructional practice. This required some degree of dialogue, mutual feedback and collaboration between various stakeholders. The Ontario model is explored in further detail below.

Mediating layers for larger educational systems and networks: One important point raised in the 2010 McKinsey report[105] relates to the roles of mediating governance institutions in ensuring communication between the center (i.e. national ministry) and the schools, much like computer operating systems. Some of these mediating layers take the form of geography-based school clusters, or subject-based groupings. These play the role of cascading administrative, financial and instructional support from the state level to the district or individual schools, depending on the size of the system in question. One good example is how the public schools in Boston, Massachusetts created nine geographic school clusters to provide peer support and sharing for principals. These cluster leaders were selected from highly effective principals to facilitate effective mentoring of other school leaders, and promote a network of interaction between teachers and students. Other roles that mediating layers can play are to facilitate the hands-on and contextual implementation of what might be broadly or technically-stated policy goals, or act as buffers for ground resistance, thus enhancing constructive communication between the center and the ground.

FOR TEACHER POLICY IMPLEMENTATION TO BE EFFECTIVE, IT IS CRITICAL THAT POLICY REFORMS ARE NOT CARRIED OUT IN ISOLATION. WHEN DIFFERENT GROUPS AND STAKEHOLDERS HAVE DIFFERENT PHILOSOPHICAL OR PRACTICAL CONSIDERATIONS, POLICIES TEND TO BE POORLY IMPLEMENTED. EFFECTIVE EDUCATION SYSTEMS HAVE A "BIG-PICTURE" PERSPECTIVE, CLARITY OF VISION, AND EFFECTIVE COMMUNICATION. KEY STRATEGIES TO ENSURE POLICY ALIGNMENT INCLUDE: (I) GOVERNANCE STRUCTURES THAT PROMOTE CONGRUENCE OF GOALS, ALIGNMENT OF ACTIVITIES AND OPTIMIZATION OF RESOURCES, (II) FACILITATION OF OPEN COLLABORATION AND COMMUNICATION AMONG ALL STAKEHOLDERS, AND (III) THE PRESENCE OF MEDIATING LAYERS AND NETWORKS FOR FACILITATING IMPLEMENTATION.

Case studies: Singapore and Ontario

SINGAPORE

Singapore's rise to the top of the OECD's PISA rankings over the last decade has cemented the nation's reputation as a top-performing education system in the world. Internationally, when educators study the Singapore education success story, systemic coherence has been cited as the cornerstone. The strong tripartite relationship between NIE, MOE and the schools, is seen as key to guiding educational policy, practice, and programs, while ensuring communication, congruence and coherence in implementation.

Common vision and objectives:

Having a common vision of medium and long-term objectives is crucial to the systemic coherence of the Singapore education system. The Singapore Ministry of Education (MOE) sets out national educational policies and guidelines based on Whole-of-Government (WOG) approach, national economic needs, industry needs, and feedback from the schools, educators, students and parents. These policies are also informed by educational research and academic thought leadership provided primarily by the National Institute of Education (NIE), Singapore's premier teacher education institution, as well as other academic think-tanks.

The holistic development of national policies ensures that they can be easily translated into practice in the schools and in teacher education programs at NIE. The close relationship and open communication among MOE, NIE and the schools lead to a common understanding and sharing of the long and medium-term objectives for Singapore education. This in turn ensures that policies are implemented in a coherent manner with the end goals always in mind, while allowing autonomy in terms of short-term deliverables. The sharing of a common vision and strategic goals allows Singapore to implement innovations, reforms and broad changes coherently and efficiently at NIE and in the schools to quickly respond to the changing needs of the economy and national interests.

Stakeholder support and voice:

As NIE and most Singapore schools are publicly funded, support at the national level is critical to the sustainability and success of teacher education and general education programs in Singapore. With the fact that teacher education programs at NIE and general education programs in the schools are developed and delivered in alignment with national and industry needs, a symbiotic relationship

is formed that ensures there is always strong backing from the government, industry and the community for educational initiatives. Beyond policy-making and implementation, the Singapore government and its leaders have often headlined international collaborations at the national level that include strategic partnerships with world-renowned educational institutions and organizations. Strong financial support from MOE and the government in the form of program and research funding ensures that the teaching faculty, facilities and infrastructure, and programmatic / curricular elements such as international exchange initiatives at NIE and the schools remain among the best in the world. Feedback and views from MOE policy makers, school leaders, students and parents also serve to inform program development and curriculum reviews at NIE.

Joint initiatives throughout every stage of teacher training:

The alignment of teacher training initiatives does not stop when teachers graduate from NIE. There is strong and organized support for teacher professional development from school leaders and the MOE. NIE, MOE and its professional academies such as the Academy of Singapore Teachers (AST) collaborate closely to offer a wide range of professional development and leadership programs for in-service educators. These include MOE / government funded or sponsored conferences, forums, seminars, courses and programs. There are also co-teaching, lesson study and action research initiatives, as well as study leave for teachers wishing to pursue higher degrees. The ministry and NIE also offer scholarship opportunities for teachers seeking Masters and PhD degrees in Singapore or abroad, either full or part-time. Teachers in MOE schools can participate in as many as 100 hours of professional development per year. Under its Teacher Growth Model, MOE has a structured mentoring framework for in-service teacher professional development that aims to "facilitate teachers taking ownership of their professional growth to nurture in students the competencies required for the twenty-first Century."

Collaborative approach to ensuring quality:

The success of the Singapore education system is not an accident, but the result of a strategically developed and well-maintained tripartite relationship between educational policy development at MOE, practice in schools, and teacher education programs and research at NIE.

There is strong and sustained government and community support, resulting in structured and well-run teacher education, teacher professional development, and education quality assurance systems and programs. With clear communication from the ministry

to the schools, the universities and NIE and the sharing of a common vision, Singapore has the capability to implement educational innovations, reforms and broad changes to quickly respond to the evolving needs of the global economy and national interests. The key is truly evidence-informed policy making that is implemented with fidelity via systemic coherence.

ONTARIO

Ontario is another good example of systemic coherence. In recent years, collaborative efforts have been undertaken by various stakeholders to facilitate greater policy alignment and implementation.

In 2004 the Ministry of Education instituted the "Building Futures" program to ease the transition from teacher education to teaching through workshops available to teacher candidates in their final year of study at public teacher education institutions. The workshops are organized around topics including aboriginal education; assessment, evaluation and reporting; special education; teachers engaging and communicating with parents; and learning mathematics for teaching. Another new program called "Survive and Thrive" is an online community for teachers at all levels – including teacher candidates – to share information and experience, as well as to establish mentorship relationships with one another.

As mentioned above, the Ontario Ministry of Education's "teaching-learning critical pathway" engaged schools and districts to develop instructional practice. Another practice that was employed by the ministry was to increase the use of research across Ontario schools. This was done by embedding research elements in all major strategies, giving public profile to high quality research and researchers, and developing and implementing an education research strategy to increase capacity and strengthen partnerships among researchers, school districts and schools.

It is also noteworthy that Ontario's four teacher unions (plus a fifth umbrella professional teacher organization) were engaged in overall improvement efforts. The views of the teacher unions are sought regularly by the ministry and they are usually invited to have a major role in setting out the conditions for some of Ontario's education policies. In addition, the ministry provides the unions with substantial funding to offer professional development sessions to teachers as a way of recognizing and strengthening the role of unions in promoting good professional practice. The ministry has also introduced the K–12 School Effectiveness Framework, which places aligned planning, actions, and capacity building at the center of the work at all levels

of the education system. The close relationship between the Ontario Ministry of Education, schools, and teacher unions has no doubt facilitated policy alignment and laid the groundwork for efficient implementation of future improvements to the education system.

10 • FUTURE ORIENTATIONS: TEACHING IN THE TWENTY-FIRST CENTURY

Overview: A rapidly changing world

We live today in a world characterized by change. In every sphere, from politics and international security to finance and technology, there are forces which seek to disrupt the status quo, for better or worse. How do we re-shape education, and by extension teacher policy, to respond to these forces of change? The most obvious need is to re-shape our curricula to ensure that the pool of knowledge communicated in schools is not static or outdated. However, it is just as important to see the role of education, and educators, as expanded to provide training in new skills and thinking tools, and new competencies for the twenty-first century.

For example, the US National Research Council has commissioned and produced a 2012 report entitled Education for Life and Work: Developing Transferable Knowledge and Skills in the 21st Century,[106] which highlights the important competencies which individuals need to cultivate in this day and age, including: cognitive competencies (such as critical thinking, reasoning and argumentation, decision-making, as well as creative thinking), intrapersonal competencies (such as intellectual openness with an appreciation for diversity, and meta-cognitive skills such as foresight and self-reflection), and interpersonal competencies (such as leadership ability, empathy, and the ability to collaborate and work effectively in teams). In relation to this, other twenty-first century competencies include new forms of "thinking": big picture, inter-disciplinary, simulation, design and computational forms of reasoning to deal with all facets of global problems.

Embedding these updated goals of education into our curricula requires teacher policy to have a paradigm shift: teachers must embrace new roles, be masters and communicators of constantly changing content, and develop new pedagogies that are aligned with the ways in which learning takes place today.

New challenges and directions for teacher policy:

New roles for teachers:
First, teachers must see themselves embodying new roles beyond the traditional image of authoritative conveyors of information and

school disciplinarians. Academics have suggested that teachers play multiple roles: appreciators, partners, patrons, guides, questioners, tutors, counselors, molders, instructors, and models. Similarly, new learning environments require students themselves to wear a whole range of 'hats': searchers, partners, designers, explorers, investigators, thinkers, clients, subjects, memorizers and trainees.[107] This wider range of roles and dynamics provides space for higher-order learning, where students become less passive and more initiated as teachers choose to play less didactic and more facilitative roles in the learning process.

In short, teachers need to understand the various ways in which they can facilitate learning and shape the classroom environment to maximize the opportunities for doing so. For example, instead of competing with informal learning taking place via multimedia (such as students accessing YouTube), teachers should harness these technologies in class, as well as understand what is being learnt outside the classroom so that they can assist learners to integrate both their formal and informal learning experiences. Studies done in Hong Kong, for instance, show that paradigm shifts toward the kind of teaching described above can improve student learning by enhancing positive attitudes to learning, providing opportunities for self-reflection, and experiencing multiple modes of thinking such as socio-cultural thinking.[108]

New pedagogies:
One aspect of teaching pedagogy that may require re-thinking is the format of the traditional classroom experience with a single teacher providing instruction to a group of students. Both these variables – the teacher and the learning group – can be modified to enhance the learning experience. For example, collaborative teaching has been introduced in some contexts as it has a number of benefits: it enables collaborative planning and the sharing of professional development strategies, enhanced visibility of teaching practices, a natural environment for peer feedback, and potentially more attention being directed to individual learners. The OECD has highlighted how these take place with teaching teams in schools in Victoria, Australia, cross-disciplinary sessions in Cramlington Learning Village (UK), and mixed-age and needs classes in certain Austrian classrooms.[109] Such collaborative practices can be nurtured by building on existing avenues for collaboration, including networks formed during initial teacher preparation and continual professional development.

Another innovative pedagogy is problem or inquiry-based learning,

which encourages students to cultivate twenty-first century competencies such as investigating a problem, formulating hypotheses or potential solutions, and self-directed learning to find relevant information not available right out of a textbook. Many schools, for example in the UK, Germany and Spain,[110] have incorporated such learning experiences, usually with an element of group work involved. One good example of how a problem-based learning (PBL) component is woven into teacher training is the NIE Educational Psychology Course in Singapore. The PBL component at NIE was designed to last seven weeks out of the 13 weeks of the Educational Psychology course. Pre-service teachers went through the PBL cycle, which included the following stages:[111]

- Stage 1: Meeting the Problem (introduction to real world problem scenarios)
- Stage 2: Problem Analysis and Learning Issues (brainstorming and analysis, with generation of hypotheses and possible explanations)
- Stage 3: Discovery and Reporting (iterative process of peer questioning, critique and learning, with multiple perspectives on the problem and potential solutions being actively discussed as new information comes to light)
- Stage 4: Solution Presentation (presentation of findings and solutions before tutor and peers outside of immediate project group; learning from other groups)
- Stage 5: Overview, Integration and Evaluation (reflection through PBL portfolio on entire exercise and key takeaways)

Finally, the advent of the technology and communication revolution means that learning has become "ubiquitous" – a term coined to indicate education taking place whether formally or informally through new media (such as handheld devices), at all times through constant flows of images and information, and in a manner that is available to more people than ever before.[112] This provides many opportunities for enhancing teacher learning, collaboration and ultimately, improving teaching practices. Teachers can organize their learning experiences supported by e-learning platforms, informal peer blogs and chatrooms, share information on cloud platforms, and ensure constant updates through RSS feeds and Facebook. Research done in this area emphasizes that such electronic platforms contain the potential for creating, sharing and analyzing information while harnessing the capacity of social networking to enhance professional collaboration, and hence is now an indispensable part of teacher policy.[113]

New content and curricula:
Finally, translating new content into updated curricula first requires

teachers to be trained and re-trained to be masters of the subject matter and related domains. Teacher training programs must also holistically cover all the competencies which students are expected to develop, as teachers themselves become the key role models for future students. There are many teacher training programs which have intentionally incorporated these insights. A broad overview of the types of future-oriented courses may include:

- Courses which provide clear visions of education in the twenty-first century;
- Courses which provide enhanced understanding of the cultural environment and social context of the education system; and
- Courses highlighting the need for professional ethics, expanding teaching roles, and reflecting on teacher identity.[114]

IN A RAPIDLY CHANGING WORLD, TEACHERS NEED TO BE COGNIZANT OF THE EVOLVING NATURE OF THE LEARNING ENVIRONMENTS. TEACHERS NEED TO EMBRACE NEW PEDAGOGIES AND TRANSFORM PRACTICES TO ACCOUNT FOR NEW WAYS IN WHICH LEARNERS ABSORB INFORMATION THROUGH TECHNOLOGY AND SOCIAL MEDIA. TEACHERS MUST APPRECIATE THEIR ROLE IN CULTIVATING TWENTY-FIRST CENTURY COMPETENCIES INCLUDING PROBLEM-SOLVING, CREATIVE-THINKING, AND INTERPERSONAL SKILLS. TEACHERS ALSO PLAY A CRITICAL ROLE IN HELPING STUDENTS BUILD CHARACTER AND INCULCATE VALUES.

Case study: Singapore

Singapore's Ministry of Education has recently developed a twenty-first century competencies (21CC) framework which is used as a reference document with the ultimate goal of producing students who are confident persons, self-directed learners, concerned citizens and active contributors to society. With the Ministry of Education's articulation of the 21CC framework, NIE also undertook a total review of its teacher education programs, working in partnership

with MOE and the schools.[115] As discussed above in the section on Initial Teacher Preparation and Accreditation Standards, the Values, Skills and Knowledge (V3SK) framework embodied in Singapore's Teacher Education Model for the 21st Century also focuses on the main characteristics of the twenty-first century teaching professional, which reflect an extended role of the teacher as one with an enhanced sense of identity and mission directed towards students, colleagues and the wider community.

Furthermore, the Teacher Growth Model (TGM) was developed as a learning framework with desired teacher outcomes for continuous professional development. The TGM Learning Continuum is organized according to five Teacher Outcomes, again reflecting the new roles that teachers play in the twenty-first century: The Ethical Educator; The Competent Professional; The Collaborative Learner; The Transformational Leader; and The Community Builder. Under each Teacher Outcome are the skills and competencies required for growth and development so that teachers can achieve the five Teacher Outcomes. Learning and development occurs in a variety of modes, such as courses, mentoring, e-learning, learning journeys, reflective practice and research-based practice.

In terms of curricula and pedagogy, pre-service programs have also pivoted to face the challenges of twenty-first century education. The end goal of pre-service preparation is to produce thinking teachers who are effective instructors and facilitators of learning and good mediators and designers of learning environments. To this end, one major change has to do with the ownership of learning being transferred from the teacher (i.e. teacher educators) to the learner (i.e. student teachers). These include problem-based learning (see above), courses on the social context of education (which provide student teachers the platform to organize student-led lessons where educational policies are discussed and reflected upon), and Science Curriculum Studies courses, which are held on-site at Junior Colleges to encourage student teachers to apply what they have learnt to real lessons in schools.

NIE has also harnessed the enabling power of technology to facilitate teacher education for twenty-first century competencies. In this regard, NIE has recently developed its own iOS and Android apps to enhance independent learning on the go. One example is NIE's mVideo that allows students to watch the videos at their own pace, test their understanding on key concepts, and participate in online discussions. This app is designed with the flipped classroom in mind: content delivery is done outside

the classroom while homework is done in the classroom.

The same twenty-first century competencies of innovation and creativity must be adopted by teachers themselves, which will create a learning environment in which these values and competencies are modeled for students. Singapore's experience shows that active steps in this regard can and should be taken, though cultural inertia and continual global changes mean that policymakers must adopt, in the parlance of the technopreneur, a "permanent beta" rather than "finished product" approach to teacher policy.

#2

RECOMMENDATIONS AND STRATEGIES FOR IMPLEMENTATION

#2 RECOMMENDATIONS AND STRATEGIES FOR IMPLEMENTATION

While every country is unique, there is no doubt that well-planned and implemented teacher policies are required in every education system.

One way of contextualizing the above areas of teacher policy is to take into account the stage of development which an education system is presently at. In the McKinsey 2010 report[116] the authors emphasize that building the instructional skills of teachers and principals' management skills, student assessment, data collection, policy documentation and education regulation, improved standards and curriculum and the placement of an appropriate remuneration structure are interventions that are common to all stages but may manifest differently at each stage.

Stages of development can be placed along a spectrum characterized by different levels of progress. For example, the McKinsey 2010 report identifies four stages from "Poor to Fair", "Fair to Good", "Good to Great" and "Great to Excellent". At each stage, the type of intervention is different, corresponding to the primary need of the education system at that juncture. For example, at the first stage, the type of intervention involves providing motivation and scaffolding for lower-skilled teachers through scripted teaching materials. As the system progresses to higher stages, for example at the "Good to Great" stage, more resources can be directed to enhancing pre-service training and certification requirements, while at the highest "Great to Excellent" stage collaborative practices are enhanced as well as the decentralization of much decision-making to schools and teachers. The report usefully contrasts the example of Armenia which, in the early stage of development, relied on centrally-driven teacher training programs, while Singapore, at the higher stages of development, allows teachers some flexibility for example in initial training modules and types of professional development activities most relevant to their needs. While a system may be in transition at any point and not fall neatly within the above stages of progress, the

important point is to reflect on the development needs of the country at any point in time to decide which type of intervention to prioritize.

Another important angle on contextualization involves looking at how different systems combine policy interventions to achieve educational improvements, given their own constraints. The 2012 World Bank Systems Approach for Better Education Results (SABER) report[117] usefully notes that every system is a result of historic trends, path dependency, and political, financial and societal constraints. While paying all teachers well may be ideal, this may not be possible given a state's resources and competing priorities, or may be possible only at a cost to some other type of policy intervention. Hence, each system should take into account its own goals and how they may be achieved efficiently without repeated, inconsistent or too many overlapping policy interventions. For example, unlike other systems which may manage teachers' activities and performance more actively throughout the academic year, the Finnish system is notable for granting professional autonomy. Yet the trust given Finnish teachers is not unjustified or merely a cultural artifact; Finnish teachers spend many hours at initial teacher training inculcating a depth of professionalism as well as teaching expertise. In this sense, their profile is shaped to be like those of tertiary educators with more autonomy. Hence, the rigorous Finnish approach to initial teacher preparation and accreditation balances out what may seem to be on the face of it, a less micro-managed or stringent approach to performance management.

With these caveats in mind, the key recommendations in each area of teacher policy can be summarized as follows:

1. Recruitment of Quality Candidates

The ideal teacher is one with a right balance of aptitude and attitude. Aptitude should include the what, who and how of teaching, that is, subject matter expertise, knowledge of learners and pedagogical skills. Attitude includes commitment and passion for teaching and a keenness to care for children and youth holistically. To identify teachers with the ideal profile, selection processes should encompass multi-pronged approaches, and maintain a high degree of rigor in selection standards. Global best practices typically involve a combination of at least a few clusters of tools, including: (a) academic performance and/or an entrance proficiency test, (b) classroom simulations, (c) interviews with experienced panels, (d) prior teaching experience and/or (e) vocational fit assessments.

2. Compensation and Incentives

Policy makers need to understand the reasons why people may or may not be attracted to teaching, which include altruistic, intrinsic and extrinsic factors. Negative perceptions of teaching relating to starting salaries, professional image, working environment and career prospects need to be actively addressed. Ensuring competitive salaries for teachers is essential and policymakers should benchmark salaries appropriately. However, raising salaries above the market average does not necessarily lead to substantial increases in quality. Many top performing systems provide competitive salaries but make room for the best to progress towards higher salary scales through built-in merit increments. Many top-performing countries also employ a range of related incentives such as performance and retention bonuses, and additional pay for extra duties taken, and leave for professional and personal growth.

3. Initial Teacher Preparation and Accreditation Standards

A quality initial teacher education (ITE) program is critical to ensuring effective teacher preparation. The best ITE programs are holistic, and include both general and specialized content knowledge training, with a substantial focus on research-informed pedagogy. They also integrate theory and practice effectively, and facilitate the growth of strong learning communities. Further, they incorporate mentoring and feedback mechanisms, for example through graduated practicum programs and formal mentor-mentee relationships. The best systems also ensure high standards of teaching by active alignment with national professional standards and rigorous accreditation. These systems also often have effective partnerships between universities and schools, to ensure a seamless transition from one to the other.

4. Career Development Structures

Education is becoming an increasingly complex enterprise and sophisticated expertise is needed in pedagogy, curriculum development, and leadership of educational units. Clearer professional pathways also signal professional authority and autonomy amongst teaching professionals. There is a need to facilitate the creation of career tracks to provide opportunities for career progression and talent allocation. For example, different tracks should be carved out for teachers with passion to work in the classroom, teachers with the experience and interest to work on content and curriculum specialization, and teachers with the aspiration and capacity for school leadership. Systematic planning, monitoring and development are important to facilitate the implementation of structures for teacher career development.

5. Professional Development and Continuous Learning

It is imperative that teachers consistently and continuously keep up-to-date with new knowledge, skills and teaching practices. Policymakers need to take new and innovative approaches to professional development. There is a need to recognize the provision of support in terms of time and resources that meet the needs of teachers at different stages of their careers. Optimal professional development goes beyond workshops and courses. It includes school-embedded professional development, sophisticated induction and mentoring, collaborative teacher networks and project-based research to improve teaching practices and learning outcomes.

6. Accountability, Performance Management and Evaluation

Teacher evaluation should focus on both teacher development and accountability. A pragmatic and multi-faceted approach is recommended. Common tools for evaluation include classroom observations by peer and senior teachers, interviews/dialogue sessions, portfolio maintenance, individual goal-setting and self-evaluation, and broader evidence of student learning and development. At the same time, pragmatism calls for an appreciation of the resource costs of implementing sophisticated evaluation tools, and calibrating these tools to each school's context.

7. School Leadership

School leadership plays a critical role in transforming the environment in which teachers and learners function. Leadership in schools needs to be visionary and grounded with a clear purpose and mission. Top-performing systems pay more attention to the selection of school leaders, promote effective leadership practices and the development of leadership capacity. Proactive approaches and succession planning is essential to identifying and grooming the potential pool of school leaders. Those with leadership aptitude should be given leadership roles progressively, and programs should be developed to promote research-based and instructional leadership practices. Leaders should be trained to handle policy implementation, nurture professional involvement and development, and practise effective public engagement. Once appointed, leaders are given greater autonomy and are expected to engage teachers through collaborative decision-making. Better-performing systems tend to have school leaders with strong instructional leadership which they actively promote and are engaged with teaching and learning which directly impacts student outcomes.

8. Teacher Symbolism

Our vision of teachers must go beyond their being mere communicators of content, and must also encompass their roles as leaders in pedagogical thinking, inspirational role models, respected domain experts and custodians of societal values. Key policy factors in enhancing teacher symbolism include (a) building on cultural regard for teachers, (b) making space for professional autonomy and trust, (c) publicizing quality-driven recruitment, selection criteria and training, (d) managing workloads and the general working environment, (e) giving national recognition for the accomplishments of teaching professionals, and (f) utilizing branding and marketing campaigns which raise the attractiveness of the profession.

9. Policy Integration, Alignment and Coherence

The whole is more than the sum of its parts when it comes to effective policy implementation. Effective education systems have a "big-picture" perspective and coordinate policies with a view to longer-term impact. Key policy strategies include (a) governance structures that ensure congruence of goals, alignment of activities and optimization of resources, (b) ensuring collaboration among all stakeholders, and (c) the presence of mediating layers and networks for facilitating implementation.

10. Future Orientations: Teaching Roles in the Twenty-first Century

In a rapidly changing world, teachers need to embrace new pedagogies and transform pedagogical practices to account for new ways that learners absorb information through technology and social media. Teachers need to be facilitators of learning, mediators of knowledge sources and designers of learning environments. Development of technologies such as cloud computing, Google applications and mobile apps provide for new sophistication in learning that may be scalable. Importantly, teachers must appreciate their role in cultivating twenty-first century competencies, including: (a) critical thinking, (b) collaboration, (c) creativity, and (d) interpersonal skills. Teachers must equip learners to solve novel problems, assume personal responsibility for learning, learn collaboratively and from multiple resources, and be able to transfer learning across disciplines and contexts.

The above-mentioned strategies are effectively reflected in the following illustration, which depicts the interaction of the first five strategies as the "micro" layer supported by the next five strategies as the encompassing "macro" layer driving teacher policy for the twenty-first century.

As shown in **Figure 1**, Teacher Policy Strategies (TPS) at the "micro" level are:

- **Recruitment of Quality Candidates**
- **Compensation and Incentives**
- **Initial Teacher Preparation and Accreditation Standards**
- **Career Development Structures**
- **Professional Development and Continuous Learning**

The relationship between the "micro" and "macro" layers is an important one. The strategies in the "micro" layer are in policy terms more proximate to the attraction and development of individual teaching professionals. From the viewpoint of the teacher, they take into account the natural cycle of progress through time, from recruitment and initial training to continuous learning and career development, supported by effective mix of financial and non-financial incentives.

Recruiting the right candidate ensures the person has the pre-requisite knowledge and foundation, a sense of calling for teaching, care for the learners, and commitment in the face of challenges. Fair and well-structured compensation and incentives ensure that teachers are rewarded and recognized. Effective initial teacher preparation is critical to preparing every individual teacher to be competent in the classroom and beyond. High standards of accreditation ensure that every teacher is properly supervised and mentored with clear benchmarks of performance. Teachers need a sense of direction in their career paths and as such, clear career trajectories have to be communicated with established pathways for growth. Professional development and continuous learning ensures that teachers can grow as individuals who are also plugged into a larger professional community which they feel proud to belong to.

The "micro-level" strategies as a cluster are necessary but not sufficient conditions for successful teacher policies as a whole. The outer layer in Figure 1 illustrates the "macro-level" strategies. The "macro-level" strategies can be understood from a broader systems perspective and include:

- Accountability, Performance Management and Evaluation
- School Leadership
- Teacher Symbolism
- Policy Integration, Alignment and Coherence
- Future Orientations: Teaching Roles in the Twenty-first Century

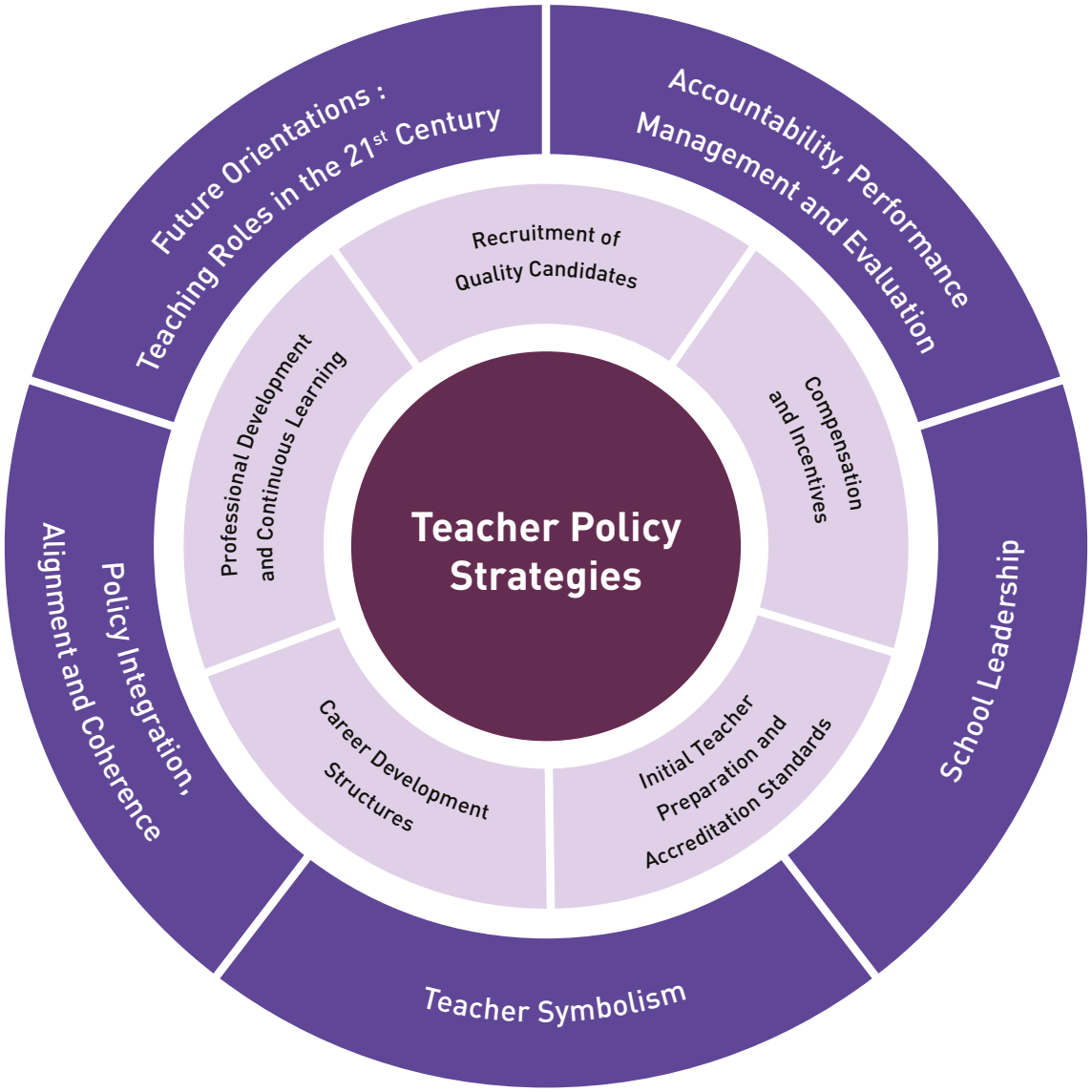
The five "macro-level" strategies pertain to ecological factors that are catalytic for the micro-layer factors to work effectively and sustainably. They are critical to teacher polices for the long haul, for building capacity and ensuring adaptability in a complex and fast-changing environment. Accountability, performance management and evaluation ensure quality assurance in teacher performance. School leadership plays a crucial role in determining the cultural and professional environment for teachers. Principals need to be equipped with leadership competencies to create a school climate of communication and care. Good school leadership promotes effective problem-solving and innovation. Teacher symbolism relates to the wider cultural ecology where teachers are accorded trust and respect. It takes all stakeholders concerned to work on the teacher's image in the community and society. In an environment where the traditional image and respect for teachers are being eroded, it will be difficult to employ the micro-level strategies without addressing such broader issues.

Policy integration, alignment and coherence is another "big picture" component of the macro-level strategy. Policy integration ensures that different policy units coordinate and communicate their goals and intentions. Intentional collaboration and coordination helps to clarify competing priorities, philosophies, and practices. Paying attention to alignment ensures that top-down and bottom-up approaches complement each other and achieve goal congruence. Finally, the rapid changes in the world call for all policies to be thought through with an orientation towards the future, particularly to empowering teachers in their changing roles.

The above teacher policy strategies at both micro and macro levels are meant to be adapted by education systems in a flexible way. Both layers are equally important. Without the "macro" layer, teachers may carry on their tasks with a modicum of efficacy, but may lack a broader sense of community and vocation. The system itself may work but will constantly be bogged down by an outdated or outmoded bureaucratic support structure. Without the "micro" layer, broad policy articulations tend to lapse into rhetoric, without any real impact on the professional lives of individual teachers. In

the final analysis, our report has shown that these ten strategies must be addressed rigorously while taking into consideration the interests of all stakeholders. This will help to implement lasting and effective improvements to a system's teacher policies.

Figure 1: Teacher Policy Strategies



ANNEX A : Comparative data on teachers' salaries[118]

(Salaries in US Dollars)

Question	Answer
What is the average teacher salary in OECD countries?	• For teachers with at least 15 years of experience: - $37,350 (pre-primary) - $39,024 (primary) - $40,570 (lower secondary) - $42,861 (upper secondary)
How does the average teacher salary compare with per capita GDP?	• Lower secondary teachers: 124% of per capita GDP • Upper secondary teachers: 129% of per capita GDP (figures adjusted for differences in purchasing power parities)
How do different countries compare against the OECD average?	• For example, for lower secondary teachers: - Above the OECD average include: Korea,Spain,Luxembourg, Portugal, Turkey, New Zealand, Canada, Finland, Germany, England, Australia, Greece and Denmark - Below the OECD average include: Belgium (Fl. & Fr.), France, Israel, Estonia, Poland, Scotland, Sweden, Netherlands, Ireland, Slovenia, Chile, Norway, US, Italy, Austria, Czech Republic, Hungary and Slovak Republic • In terms of per capita GDP, for lower secondary teachers in Korea, Mexico, Germany, Portugal, Spain, the Netherlands, Ireland, New Zealand and Germany, annual earnings are between 150% and 215% of per capita GDP. Annual earnings are 70% or less of per capita GDP in the Slovak Republic, Estonia, Hungary, Romania, Indonesia and others • In terms of per capita GDP, for upper secondary teachers in Germany, Korea, Portugal, Spain, Turkey, Hong Kong (China), among others, annual earnings are between 160% and 223% of per capita GDP. Conversely, in the Slovak Republic, Estonia, Romania, Indonesia and others, the corresponding figure is between 44% and 68% of per capita GDP
How does the average OECD teacher salary compare with average salary of other tertiary educated workers?	• At primary school level, teachers' salaries are 85% of average earnings for those aged 25-64 with a tertiary education • At upper secondary level, teachers' salaries are 92% of average earnings of tertiary education workers

Question	Answer
How do different countries compare against the average salary of other tertiary educated workers?	• Above the OECD average for tertiary-educated workers: Korea, Spain, Luxembourg, Portugal, Turkey, New Zealand, Canada • Below the OECD average for tertiary-educated workers: Finland, Germany, England, Australia, Greece, Denmark, Belgium (Fl. & Fr.), France, Israel, Estonia, Poland, Scotland, Sweden, Netherlands, Ireland, Slovenia, Chile, Norway, US, Italy, Austria, Czech Republic, Hungary and Slovak Republic
What is the average increase in salary across the course of a teacher's career?	• Pre-primary level: 58% increase over starting salaries • Lower secondary level: 61% increase over starting salaries • Upper secondary level: 62% increase over starting salaries (Depends among other things on how long it takes to get to the top of the salary scale and the type of qualifications the teacher possesses)
How do various countries increase their teachers' salaries over the course of careers?	• Higher ratios: In Singapore, Shanghai (China), Malaysia, among others, salaries at the top end of the scale are 2.5 times higher than starting salaries (takes between 20 and 40 years to reach the top salary). In Shanghai, the top salary is 4.5 times larger than the starting salary for lower secondary teachers and 5.6 times greater for upper secondary teachers. • Lower ratios: In Denmark, Iceland, Norway, Slovenia, Sweden, Finland, Germany and others, teachers' maximum salaries are 1.4 times higher than starting salaries.

ANNEX B : Scaling teachers' salaries – a selected survey[119]

(Salaries in US Dollars)

	Starting salary	After acquiring relevant teaching experience
OECD average	$30,735 (for lower secondary teachers)	$40,570 (15 years' experience) $48,938 (top of pay scale)
Canada	$37,145 (lower secondary) $37,294 (upper secondary)	$58,495 (15 years' experience) $50,000-$90,000 (top of pay scale, depending on province)
Finland	$34,720 (lower secondary)	$45,157 (top of pay scale)
South Korea	$30,401 (lower secondary)	$84,529 (top of pay scale)
Singapore	$31,200	$77,693 (top of pay scale)

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The National Institute of Education (NIE) is renowned for its excellence in teacher education and educational research. NIE has played a pivotal role in the transformation of Singapore through shaping and developing the nation's teaching workforce and school leaders. Singapore topped the OECD's global education ranking in 2015. With a futuristic orientation, NIE prepares teachers with the requisite values, skills and knowledge to meet the demands of twenty-first century learners. NIE's degree, postgraduate, doctoral and executive programs are based on research and evidence-informed best practices, and delivered using innovative pedagogies. NIE is ranked among the top ten in the world for research impact and excellence in the field of education. NIE's international reputation has led it to build strategic alliances with other renowned institutions in the US, Europe and the Asia Pacific region. NIE has shared expertise with many governments and international bodies through its consulting arm, NIE International.

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