McKinsey Education

Shaping the Future: How Good Education Systems Can Become Great in the Decade Ahead

Report on the International Education Roundtable:
7 July 2009, Singapore

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Sir Michael Barber and Dr Mona Mourshed

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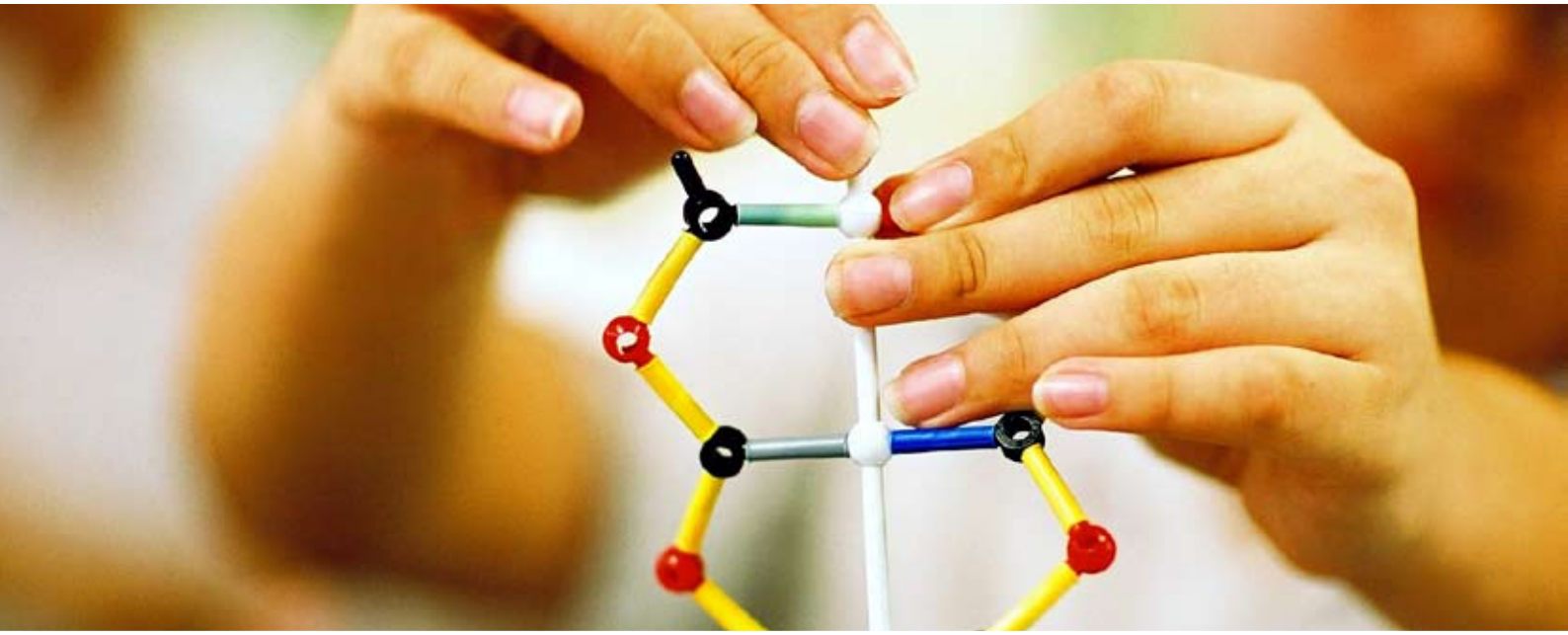


I. Introduction: Building Great Systems

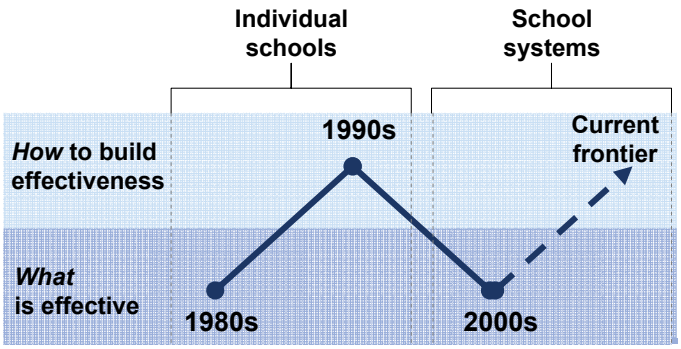
On July 7, 2009, Singapore's Minister of Education hosted an International Education Roundtable discussion (IER) with ministers and senior representatives from six school systems around the world: Alberta, Canada; Hong Kong, China; the People's Republic of China; Sweden; the United States of America; and Victoria, Australia. McKinsey & Company facilitated the discussion. The co-chairs of the roundtable were Minister Ng Eng Hen of Singapore and Sir Michael Barber, head of McKinsey's global education practice. This report is a synthesis of the IER.

The IER was an exploration of the frontier of education system reform for leading school systems globally, and an opportunity to share challenges faced, solutions tried, and lessons learnt among participating systems. Its aim was to enable ministers to explore how their largely well-performing education systems could become highly effective ('good to great') over the next decade.

If the challenge of the 1980s was describing what effective schools are, of the 1990s, how to make schools more effective and of the 2000s, describing what effective systems are, then the pressing question for the 2010s is how to make systems more effective (*Exhibit 1*).

Exhibit 1

The frontier challenge in education is how to make whole school systems more effective



This present fourth challenge – how to make systems effective – was the focus of the IER, and three aspects of it were discussed:

- Given the rapid social, economic, and technological changes in our world, what are the educational challenges for leading systems over the next 10 to 20 years?
- In particular, how is the use of information and communication technology (ICT) for learning evolving, and how can ICT be effectively employed system-wide for teaching and learning?
- How do we establish the great teaching and school leadership that are needed to meet the educational challenges of the future, as well as seize new opportunities such as those offered by ICT?

II. Understanding the global context – the challenges of leading education systems in the next 10 to 20 years

The knowledge and skills that an educated person will need in 20 years will be markedly different from what school systems currently provide. In fact, we cannot wholly predict what an educated person will require 20 years from now. Thus, school systems face the significant challenge of having to develop the learning experiences that they provide without much clarity about what exactly students will need. That unpredictable future framed the first question that the IER discussed: what do our students need to learn today to be prepared for tomorrow?

Engaging citizens

Several of the systems that participated in the IER are actively engaged in attempting to answer the important question of what their students will need to be well educated in 10-20 years. Alberta has done this ambitiously, reaching out widely to diverse citizen groups, including highly engaged community members (such as parents who are already active in schools) and disengaged community members (such as school drop-outs), to engage them in a dialogue that focuses, firstly, on the value of education, and, secondly, on the question of what an educated Albertan will look like in 2029. From these dialogues Alberta has articulated a need to shift from an industrial model of schooling to one that focuses on equipping students for a knowledge economy — by providing them with the ability to seek, synthesise and think critically about the ever-expanding volumes of information available to students, as well as simply acquire knowledge.

Other systems are also attempting to articulate students' future needs, and to transform education in an effort to meet them. For example, China is drafting an outline plan for medium- to long-term education reform to achieve the development goals that it has set for 2020. In the process of developing its education reform outline, China sought public opinion through e-mail, letters, and meetings...and gathered 1.2 million contributions! Another example is Hong Kong, China, which has undertaken a successful curriculum reform that establishes patterns for life-long learning so that graduates will be able to adapt to change throughout their lives. Its curriculum changes therefore emphasise learning how to learn. It is also placing an emphasis on breadth and integration across academic disciplines; for example, someone with an interest in medicine will be expected to also have some exposure to music or mathematics.

A formula for the curriculum

Michael Barber offered a model of what it might mean to be well educated:

Well educated = E (K + T + L)

The letter 'K' stands for knowledge, 'T' for thinking, 'L' for leadership (leading both yourself and others), and 'E' for ethical underpinning. Barber's model expands the traditional focus on knowledge and critical thinking to include the leadership skills required to convert original thought into action and influence, and the ethical underpinning to wield that influence for the good of society. This model resonated with IER participants because it broadened the mandate of education systems beyond knowledge-acquistion to thinking, leadership and ethical underpinning. This more holistic set of skills and characteristics will only grow in importance in the years ahead. While participants agreed all the elements of the model resonated, the shift to teaching critical thinking skills is the one that several of the participating systems are already trying to embed in their schools. Participants emphasized too the importance of vocational education which offered multiple pathways to success and emphasized genuine learning not just training, since all education at school should prepare young people for lifelong learning.

Nine characteristics of effective systems

Barber also shared a synthesis of the nine building blocks of effective school systems. Whereas E(K + T + L) is a conceptual model of what students will need in order to be well-educated in the future, the nine building blocks synthesise research and experience on what effective systems currently do in order to deliver on the promise of providing excellent education. The building blocks are organised into three categories, with three elements in each (*Exhibit 2)*.

Exhibit 2

The building blocks of world-class education: what we already know

Standards and Accountability	Human Capital	Structure and Organisation
Globally benchmarked standards	Recruit great people and train them well	Effective, enabling central department and agencies
Good, transparent data	Continuous improvement of pedagogical skills and knowledge	Capacity to manage change and engage communities at every level
Every child on the agenda always in order to challenge inequality	Great leadership at school level	Operational responsibility and budgets significantly devolved to school level

SOURCE: Barber 2008; Whelan 2009

Barber's assertion is that the systems which will succeed in future are those that deliver these nine building blocks in a coherent and integrated manner. According to Barber, systems that underperform will be those that implement a series of separate initiatives, which may individually have merit, but do not add up to a strategy. Success will require whole-system reform, marked by coherence in the agenda and programme design, as well as effective execution.

Of these nine building blocks, the element most discussed at the IER was of providing equitable access to all children. The challenge of providing rural students with equitable access to a high quality education was common across several of the participating systems, while in others it was the challenge of deprived urban areas. The message was clear: we need all children to succeed. This is different from what education systems tried to do in the 20th century where sifting out an elite was tolerated and made economic sense. Of course, in the 21st century the high floor for all should not become a ceiling preventing the most talented achieving exceptional performance (*Exhibit 3*).

Exhibit 3

Key questions on the challenges of educating students over the next 10-20 years

- What new demands do the changes in our social and economic world (e.g. globalisation, information ubiquity, climate change) place on the education that our schools systems will provide in the 21st century?
- Equity is a common challenge and commitment. How will we reach a high floor in the system but also not have a ceiling that limits high achievers? How do we provide different pathways for success for different groups of learners?
- Successfully anticipating and meeting the future needs of our students will require engaging the public to understand and answer those questions. The Albertan engagement provides an example of what systems can to do engage and move people with a modern and wide-reaching campaign. How can governments more actively engage citizens in the debate about the future of education?
- If we accepted the function "Well educated = E (K + T + L)" that was discussed by the IER, how would we test for the outcomes we want? Good tests of literacy and numeracy are essential but not enough.
- As school systems evolve to meet the challenges of providing a 21st century education, how will they develop ever higher levels of teaching quality and school leadership?

The IER's wide-ranging opening discussion raised numerous important questions, some of which are listed above. Participants chose to focus the subsequent discussion on just two of those: 1) unleashing the power of technology for learning, and 2) unleashing the power of people as teachers and school leaders, system-wide. Innovations in ICT offer potential solutions for improving teaching and learning, including improving access and collaboration across a system. Success in employing ICT for learning, and broader success in meeting the educational challenges of the next 10 to 20 years, will require, more than ever, the ability to take great teaching and school leadership practice to scale across an entire system.

III. Unleashing the power of technology for learning

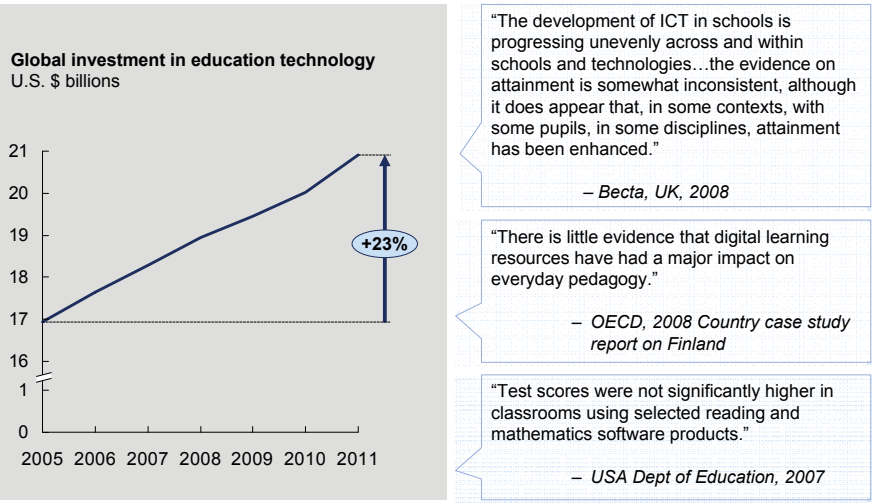
The use of ICT for learning offers great potential for improving quality. For example, ICT offers an opportunity to put greater ownership for learning in the hands of students, who themselves can help lead the way to unleash the power of ICT for learning. However, most systems are still using ICT for largely marginal improvement, rather than to effect a transformational change. While education ICT investment is growing, its potential to transform teaching and learning has yet to be fully unleashed. On one hand, ICT offers the potential to:

- transform classroom practice, for example, by customising instruction to the needs and aspirations of individual learners
- expand access to quality learning dramatically (for example, to rural learners)
- increase collaboration amongst teachers, students, parents and communities

On the other hand, if not used effectively ICT becomes little more than a glorified typewriter...and an expensive one at that! This point was clearly made: ICT is a tool – a powerful tool – but a neutral one. The IER discussion therefore focused on examples of effective and innovative ICT use for learning, and on the challenge of bringing about system-wide effective use of ICT, especially and most importantly at classroom level. The best schools are beginning to embed ICT in the day-to-day experience in every classroom but too often even now ICT remains separate from the classroom experience in, for example, "a computer lab" (*Exhibit 4*).

Exhibit 4

While education ICT investment is growing, its potential to transform teaching and learning has yet to be fully unleashed

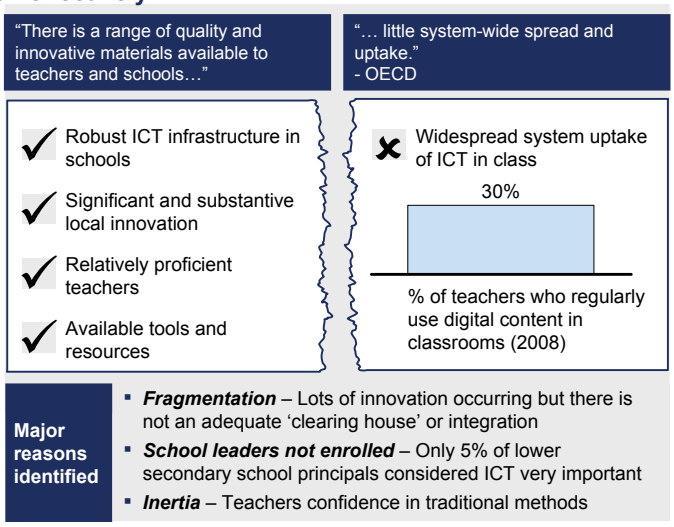


SOURCE: England Harnessing Technology Schools Survey 2008, Becta; OECD study on digital learning resources as systemic innovation: Country case study report on Finland, 2009; US Department of Education National Center for Education Evaluation and Regional Assistance report to congress, March 2007

A second point noted was that some systems with very good student outcomes are not the biggest spenders on, nor necessarily leaders in, the use of ICT. Finland, for example, consistently achieves some of the world's best student outcomes but as a system has not yet become a leader in the use of ICT (*Exhibit 5)*. Indeed, achieving effectiveness with traditional methods may create inertia in the adoption of new methods, including ICT for learning. The rapid pace of technological change in the world places new demands on students' technology skills, and on how schools teach those skills. It also creates new opportunities to monitor and diagnose student progress and to tailor instruction to individual's learning needs and aspirations. Over time systems will have little choice but to adapt to and adopt ICT in instructional practice, but so far the progress is limited and the ways forward are not clear.

Exhibit 5

A recent OECD report on Finland identified integration, enrolling leaders, and overcoming inertia as challenges to scaling ICT innovation effectively



SOURCE: OECD study on digital learning resources as systemic innovation: Country case study report on Finland, 2009

In technological innovation new opportunities are beginning to appear for bringing about effective teaching and learning. IER participants shared numerous potentially powerful examples of how the use of ICT helped improve learning. Examples shared include:

- Student response systems that allow teachers to adapt their teaching based on real-time evidence of student comprehension
- The use of interactive whiteboards (IWBs) to increase student engagement and improve instruction
- The adaptation of learning content in real-time, thereby customizing instruction to meet students' individual needs and aspirations

- Virtual simulations that are used for teachers' and principals' professional development, and which could become much more widespread

- Broadcast technology which allows for wide access to educational content, such as India's Educast and the UK's Teacher's TV

Online collaboration platforms enable sharing and access amongst teachers and students, such as Lektion.se in Sweden and Victoria's cutting-edge Ultranet. The Ultranet represents a recent system investment in an online interactive platform. Ultranet enables teachers, students and families to interact and collaborate to build educational content. For example, two teachers many miles apart can co-develop course materials, or a rural and urban class can interact and share resources online.

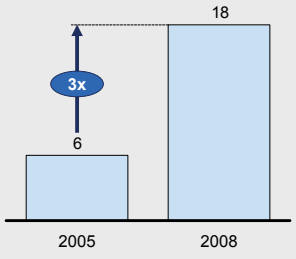
Online learning platforms are also being used to customise programmes for the needs of students outside the mainstream education system, such as the UK's Young Gifted and Talented portal that expands learning opportunities for highly gifted learners; or Notschool.net also in the UK that helps engage students for whom mainstream schools are not an option.

Virtual learning programmes in the USA have expanded dramatically, with primary and secondary enrolment in online courses growing ten-fold between 2001 and 2007. Florida's Virtual School, for example, has over 70,000 students. (See *Exhibits 6-11* on the following pages for examples of interactive online learning programmes from around the world).

Exhibit 6

The use of interactive whiteboards (IWBs) is expanding ... as is knowledge about their effective use for learning

Average number of interactive whiteboards per primary school in England[1]



Interactive whiteboards led to consistent gains across all key stages and subjects with increasingly significant impact
– BECTA[2]

Uses of whiteboards NOT EXHAUSTIVE

- Access, use, and interact with a range of electronic content – software, video, simulations, online material, class polls if integrated with student response systems
- Save content – lessons/presentations, student work, class assessment data
- Get students interacting with the whiteboard directly with a stylus
- Connect to other classes at other schools through a PC-internet connection

1 Becta
2 Evaluation of the DCSF Primary Schools Whiteboard Expansion Project, DCSF and Becta (2007)
SOURCE: GLOVER,D. and MILLER, D. 2001. Running with technology: the pedagogic impact of the large-scale introduction of interactive whiteboards in one secondary school. LEVY, P. 2002; Interactive Whiteboards in learning and teaching in two Sheffield schools: a developmental study, KENNEWELL, S. 2001; Interactive whiteboards – yet another solution looking for a problem to solve?, Becta; Evaluation of the DCSF Primary Schools Whiteboard Expansion Project, DCSF and Becta (2007)

Exhibit 7

Adaptive content tailors instruction to students' individual needs

Deliver interactive content

Formative assessment

Learner profiled, content adapted

Learner progress tracked and reported

Adaptive content facilitates the key success factors in assessment for learning (AFL)

- Regular testing to adapt teaching
- Enhanced feedback
- Active engagement of all pupils
- Building motivation and self-belief

Ratlam, India	▪ 90% of students in pilot trial of adaptive software showed improved learning
Washington DC, USA	▪ A high school experiment with adaptive software[1] showed twice as high learning gains as other students

1 Tabula Digita's Dimenxian™ Algebra curriculum

SOURCE: Government of Alberta and Dimenxian, Black et al 1999 Working Inside the Black Box: Assessment for Learning in the Classroom,

Exhibit 8

Interactive technology is also being used for teacher and principal professional development (virtual simulations)

National College of School Leadership – *Leading from the Middle* uses a virtual school model as part of its course

- Scenario-based simulation for teachers and school leaders
- Introduces leadership issues within a computer-generated school environment
- Offers teachers the opportunity to see the possible consequences of their decisions and try alternative approaches

4,000–6,000 school leaders use the system

SOURCE: Global Information Society Watch 2008, http://www.britishcouncil.org/india-connecting-efp-tom-presentation.pdf, Interview Centre for Educational Excellence

Exhibit 9

Online collaboration platforms enable sharing and access amongst teachers and students

Sweden

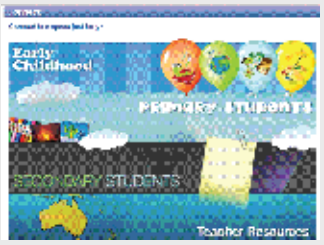
***Lektion.se* is an collaboration web site for educators**

- A community website where teachers upload, share and discuss teaching and learning materials which they have produced
- 167,000 registered users in 2008, mostly primary and secondary teachers, and >1 million page views a week

Victoria

Connect* and *Ultranet

- *Connect* is a free-access learning resources portal for teachers and students
  - Separate sections for students at different school levels, and teachers
  - Content includes websites, video, audio, lesson guides, global projects, etc
- *Ultranet is a* new 60m USD environment that allows teachers and students to interact, co-create modules, share and review assignments, etc



SOURCE: OECD study on digital learning resources as systemic innovation: Country case study report on Sweden, 2009; Department of Education and Early Childhood Development, Victoria, web site

Exhibit 10

Several systems are using online learning to tailor programmes to the needs of students outside the mainstream

Young, Gifted and Talented

Expanded learning opportunities for highly gifted learners

- Part of the UK national Gifted & Talented strategy
- School determines eligibility, ages 4-19
- Separate sections for primary and secondary school age learners
- Content includes interactive learning and enrichment resources (learning games, blog forums, community programmes, revision guides, a resource library, etc)

Notschool.net

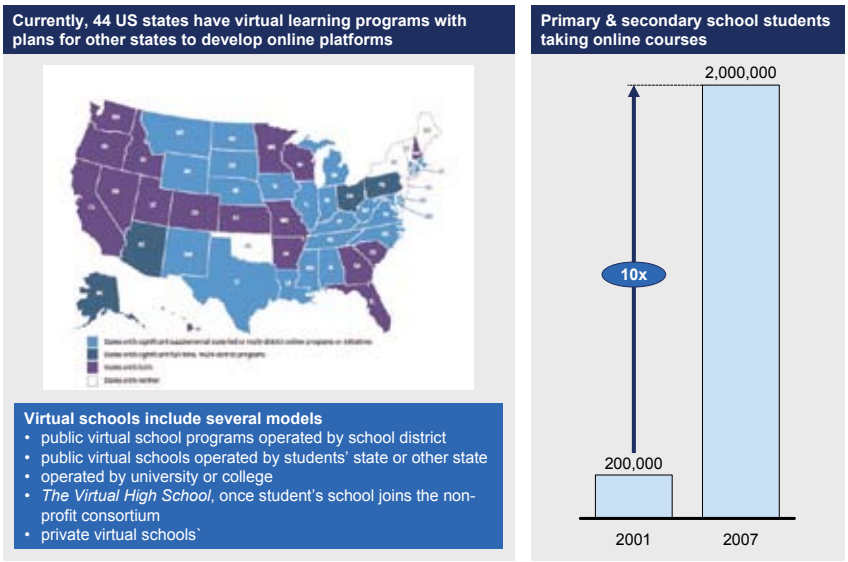
Engaging students for whom mainstream schools are not an option

- An Online Learning Community offering an alternative to traditional education (>5,500 learners, 2000-2008)
- Teenagers on the project are known as researchers; teachers as mentors and experts; and a small group of 16-plus teenagers are known as buddies
- 65-70% of students pass on to college or work based learning,
  (45–60% go to college); 25–30% go directly to work

SOURCE: Virtual Virginia Webpage; Web Search

Exhibit 11

Virtual learning programmes in the USA allow broader access to consistent and high quality learning to geographically dispersed students



SOURCE: John Watson, Butch Gemin and Jennifer Ryan, "Keeping Pace with K-12 Online Learning: A Review of State-Level Policy and Practice, 2008; Centre for America Progress ,Getting Students More Learning Time Online 2008; Global Information Society Watch 2008

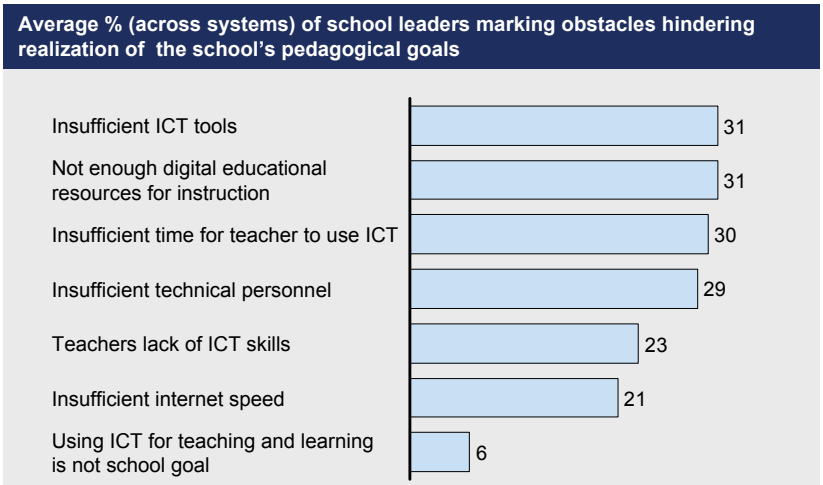
The examples and opportunities afforded by the use of ICT are numerous. The challenge, of course, is how to effectively employ ICT across an entire school system. The IER discussion identified a number of aspects to the challenge, including:

- Overcoming the inertia of past practice and, in some cases, the legacy of poor past policy
- Effective system-wide infrastructure (more than just computers in each school, but also technical support, common technical standards, etc.)
- Supportive school leadership
- Teacher familiarity and skill with ICT for instruction so that they can align technology with the teaching and learning process

These points were echoed by the Global SITES Survey which included over 20 countries and regions in 5 continents. The survey identified a number of obstacles to effective ICT use in school (*Exhibit 12)*. The top obstacles identified were lack of technical infrastructure, teacher familiarity (or time to familiarise one's self with new tools) and support from school leaders. For example, in Singapore's first Masterplan for ICT in Education, all teachers were provided with 30-50 hours of training, within their own schools and in groups of educators teaching the same subjects. This kind of comprehensive strategic approach is a model for others to follow (*Exhibit 13).*

Exhibit 12

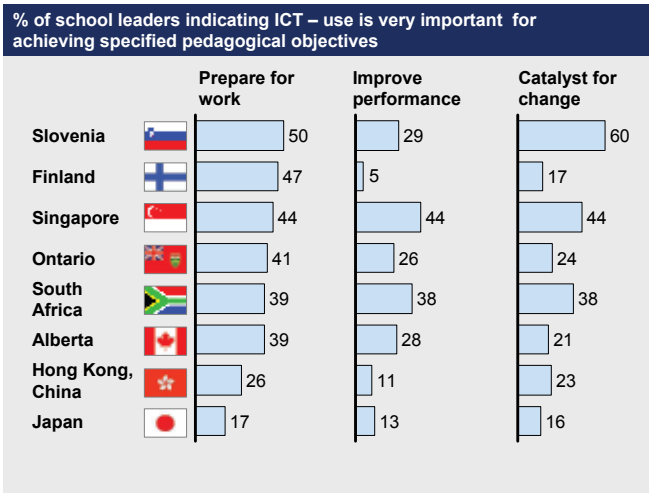
Educators identify a number of obstacles to effective use of ICT in schools



SOURCE: IEA and University of Hong Kong Pedagogy and ICT use in schools around the world 2006

Exhibit 13

School leaders' support for ICT to transform teaching and learning is variable, but crucial to teachers' use of it



"Teachers in systems where the principal had strong vision for ICT generally showed a higher lifelong learning orientation in their ICT using practices" IEA 2006

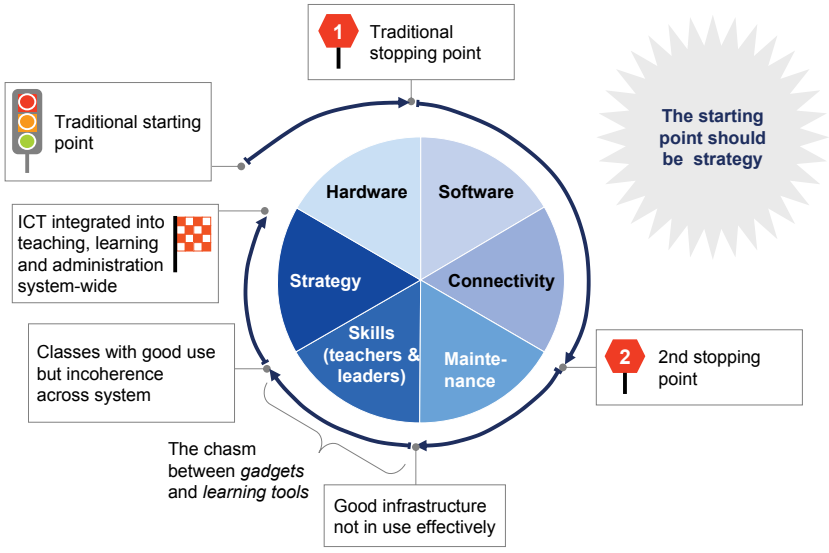
SOURCE IEA and University of Hong Kong - Pedagogy and ICT use in schools around the world 2006

The journey starts with strategy

The IER introduced a model representing the journey to effective system-wide ICT integration. The model makes the point that for effective system-wide ICT use, school systems have to move beyond the traditional technical considerations of hardware, software, connectivity and maintenance. As laudable and ambitious as it can be to achieve that improved physical resourcing for schools, systems need also to build capability among teachers and school leaders. A second point that the model makes is that the starting point for the system's adoption of ICT should be a strategy for integrating ICT into instruction and administration, and not introducing new computer labs across schools without forethought about how that investment in technology can be used effectively by schools. Starting with strategy would lead to a more complete and thought-through approach to ICT implementation and the allocation of budgets. It would also engender greater coherence in the technology and the technical systems that are being used across the system (*Exhibit 14, 15)*.

Exhibit 14

The journey to effective system-wide ICT integration



SOURCE: McKinsey & Company

Exhibit 15

Using information and communication technology (ICT) for learning, system-wide

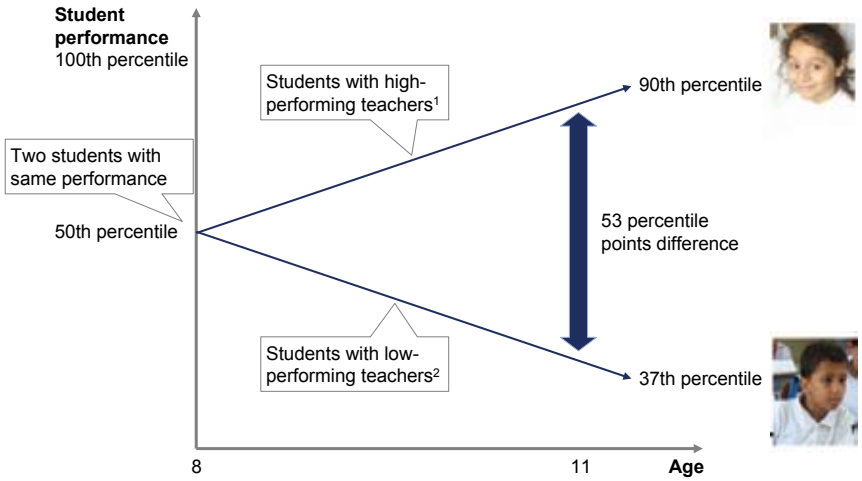
- ICT use for teaching and learning can unlock the potential of students.
- There is no doubt that technology is and will continue to change the lives of young people, which offers both great opportunities (e.g., place greater ownership for learning in students' hands) and great challenges (e.g., preparing teachers to be able to help students learn using ICT, responsibly).
- The starting point for effective system-wide use of ICT should be a strategy that addresses both technical systems (hardware, software, protocols, maintenance, etc.) and supporting staff (e.g., building familiarity and competence among teachers).

IV. Unleashing the power of people, system-wide

Realising the potential of ICT for learning, as well as meeting the broader challenge of providing a 21st century education, will require establishing system-wide excellence in teaching and school leadership. The central importance of good teaching and school leadership in student outcomes is widely acknowledged. Over 3 years, learning with a high-performing teacher instead of a low-performing teacher can make a 53-percentile difference for two students who start at the same achievement level.[1] There is no more important empirical determinant of student outcomes than good teaching (***Exhibit 16)***. Second only to the quality of teaching is school leadership (***Exhibit 17)***. Replacing an 'average' principal with an outstanding principal in an 'average' school could increase student achievement by over 20 percentile points.[2] The ministers participating in the IER made the point that the need for excellent teachers and school leaders is all the more acute given the scale and ambition of reforms that education systems are undertaking.

Exhibit 16

Teaching quality is the most important determinant of student outcomes



1 Among top 20% teachers
2 Among bottom 20% teachers

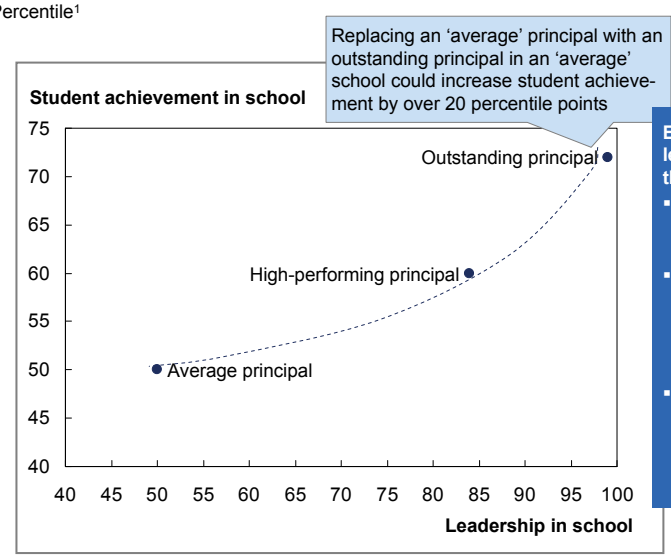
SOURCE: Sanders and Rivers 'Cumulative and residual effects on future student academic achievement'

1 How the World's Best School Systems Come Out on Top, McKinsey & Company, 2007
2 Ibid.

Exhibit 17

Effective school leadership is also critical to student achievement

Percentile[1]



1 For leadership and student achievement, percentile implies the relative placement within the distribution

SOURCE: A 'meta-analysis' of 69 studies of school leadership conducted between 1978 and 2001, involving an estimated 14,000 teachers and 1.4 million students, Marzano, Robert J., Timothy Waters, and Brian A. McNulty, 2005

Fortunately, there is also good agreement about what constitutes effective teaching and leadership. Instead, the challenges for both teaching and leadership are how recruit the right people into these positions, in the right number; to retain them; and then to scale up good teaching practice and leadership across a large system so that every student has an effective teacher and every school has an effective leader. The IER discussion focused on three aspects of these challenges:

- Attracting top talent into teaching and school leadership, and retaining them
- Strengthening the professionalism of the teaching force
- Motivating and managing the performance of school professionals

Finding talent – the challenge of attracting great people into teaching

Participating systems differed significantly in the calibre of people who currently become teachers and school leaders – from relatively unselective to highly selective systems that only accept top-performing graduates. Those selective systems set high entry requirements and then use additional quality screens such as interviews and practice observations to identify top talent. The IER participants were unanimous about the value of being selective, and some participating systems are instituting more selective criteria for teachers. For example, China has

raised the academic qualifications for teachers at all levels of the education system (primary, secondary and tertiary). China is simultaneously working to increase the attractiveness of the profession to prospective teacher applicants by ensuring compensation comparable to civil servants and introducing performance-based pay.

However, one challenge that a stricter capability filter raises is that it could reduce (at least initially) the number of new teachers and therefore might make it temporarily harder to provide enough teachers for the system. In response to this challenge, some systems are expanding their search for top talent to non-traditional sources – such as experienced professionals in other fields. Over the past 5 years, 1 in 4 new teacher recruits in Singapore had worked in other fields before. The global economic slow-down has created an opportunity for systems to cast a wider net and recruit talented people from other sectors who are attracted by the prospect of a career shift, and particularly one with increased stability (*Exhibit 18)*. Another example: on the day Lehman Brothers shut down in London, the UK's teacher recruiters set up operations right outside the bank and attracted inquiries from almost 300 people. Similarly, during the financial crisis Singapore's Ministry of Education set up a recruiting station in the heart of the financial district.

Exhibit 18

During the financial crisis Singapore's Ministry of Education set up a recruiting station in the financial district

SOURCE: Singapore Ministry of Education

Keeping talent – the challenge of retaining great people in teaching

Retaining good teachers and leaders was a common challenge for several participating systems. The already-challenging jobs of teaching students and leading schools are becoming increasingly complex owing to:

- Increasingly diverse school populations
- A rapid change in the expectations of school systems, namely that all students learn to higher standards
- An increase in the volume of information and learning resources available, as well as in the quality of that information and those resources
- An often demanding and rapidly changing reform agenda

Additionally, the continued burden of administrative obligations often draws teachers and leaders away from their instructional focus – and away from the intrinsic sources of professional fulfilment. Without adequate support for administrative and instructional tasks even the most capable and committed of teachers are at risk of leaving the system.

A number of systemic approaches to supporting teachers were shared. The first of these was improving the quality of school leadership. The participants recognised that poor school leadership is in many countries the most important reason why teachers leave the profession; the evidence suggests that it is much more important than pay. A second important source of support is engaging the community around schools to help in dealing with social and community issues, such as drug abuse and poverty. A third was the support from the government, through stronger curriculum support and resourcing, and professional development opportunities. Sweden, for example, is offering every teacher once in their working lifetime the opportunity to go back to university for 6 months or 1 year. The fourth approach to supporting teachers focused on peer support, and specifically on professional development, through collaboration with peers. Successful systems are creating more opportunities and spaces for teachers to work together in sharing practices and research, developing lesson plans, and building consensus on what constitutes good teaching practice.

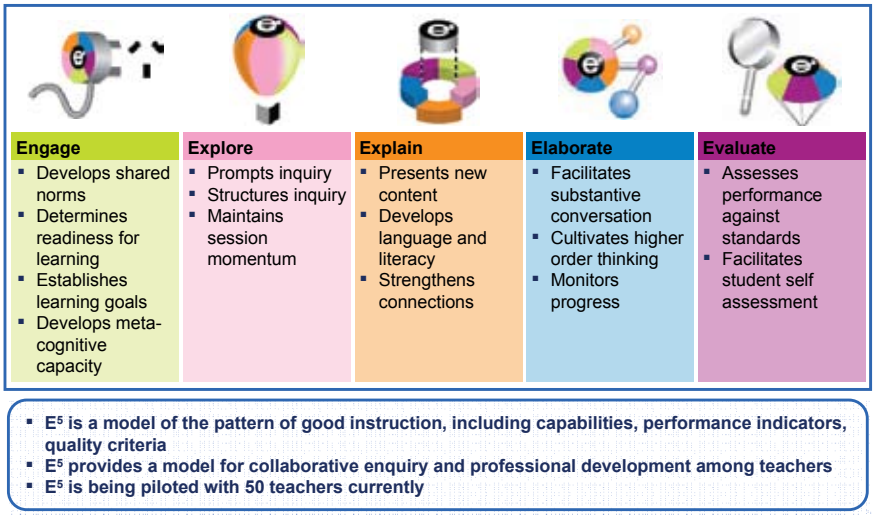
Developing talent – making the most of teachers

To get the most out of talented teachers it is critical that systems effectively support the development of that talent. The most powerful avenue for this is high-quality collaborative, job-focused professional development amongst teachers and school leaders.

In comparison to some of the other professions, such as law, accounting, or medicine, teaching has been "a profession without a practice."[3] Therefore the starting point should be developing a stronger consensus about what constitutes good teaching practice, and then ensuring that it is consistently applied. Some systems are investing in developing a normative model of good teaching practice, and are using it as a platform for more professional collaboration. For example, Singapore established the Centre for Research in Pedagogy and Practice in the National Institute of Education to undertake detailed studies of classroom practices to glean insights for improvement. Also Victoria, Australia, developed the E^5 model of good teaching practice for use by both teachers and instructional leaders (***Exhibit 19***). Hong Kong, China and New Zealand have each defined competencies and/or classroom indicators of good teaching. These models are useful for both professional development and performance management. Crucially, they create a common language which enables teachers to engage in professional dialogue about what constitutes effective practice.

Exhibit 19

Victoria has developed the E5 Instructional Model as a guide for good teaching practice



SOURCE: Victoria Department of Education and Early Childhood Development

With regard to professional development, a model of good teaching practice provides the backbone for professional collaboration amongst teachers and leaders in schools. It provides a reference with which teachers can co-develop knowledge and teaching plans, study elements of good practice together, share experiences and problem-solving, mentor each other, and hold each other accountable for good practice.

3 This phrase is from Richard Elmore, Professor of Education at Harvard University.

The expansion of Professional Learning Communities (PLCs) is indicative of the increased emphasis on teacher collaboration as the means of professional development. Through effective PLCs, teachers work together to:

- Research, try, and share best practices
- Analyse and constantly aim for high, internationally benchmarked standards
- Analyse student data and plan instruction
- Map and articulate curriculum;
- Observe and coach each other

PLCs are an indication of a broader trend towards professional development that is increasingly collaborative, data-driven, and peer-facilitated, all with a focus on classroom practice. In Shanghai, China, all teachers are required to visit and observe at least eight lessons by a colleague each term. In Japan, teachers work in teams to analyse and develop model lessons. In Boston, USA, teachers' timetables include common planning time used for facilitated analysis of assessment data and instructional plans. The session is facilitated by the principal or a coach. This professional collaboration in development and planning seems to translate into collaboration in teaching (*Exhibit 20)*. The 2009 Teaching and Learning International Survey (TALIS) found that "teachers who attend more professional development functions, especially in a co-operative context, are more likely to be involved in co-operative teaching." It also seems to be contagious. The same survey found that "teachers who exchange ideas and information and co-ordinate their practices with other teachers also report more positive teacher-student relations at their schools."

Exhibit 20

Professional development is increasingly collaborative, data-driven, and facilitated, all with a focus on classroom practice

Shanghai, China 	All teachers are required to visit and **observe** at least eight lessons by a colleague each term.
Japan 	Teachers work in teams to analyze and develop **model lessons**. The study requires each teacher to reflect in depth on their own practice, with the assistance of their peers.
Boston, USA 	Teachers were timetabled to have **common planning time**. This time was used for analysis of assessment data, whereby teachers looked at results from assessments and using them to inform teaching plans. Session facilitated by the principal or a coach.

Professional learning communities (PLCs)

Professional collaboration amongst teachers and leaders by continuously seeking and sharing learning, and then acting on it

- Researching, trying, and sharing best practice
- Analyzing standards
- Analyzing student data and planning instruction
- Mapping and articulating curriculum
- Observing and coaching each other, etc.

"Teachers who attend more professional development, especially in a co-operative context, are more likely to be involved in co-operative teaching." - TALIS, 2009

"Teachers who exchange ideas and information and co-ordinate their practices with other teachers also report more positive teacher-student relations at their schools" - TALIS, 2009

SOURCE: Teacher Advancement Program website and press; SEDL; Dufour Learning by Doing: A Handbook for Building Professional Learning Communities(2006); California department of Education

Managing talent – the performance management of teachers

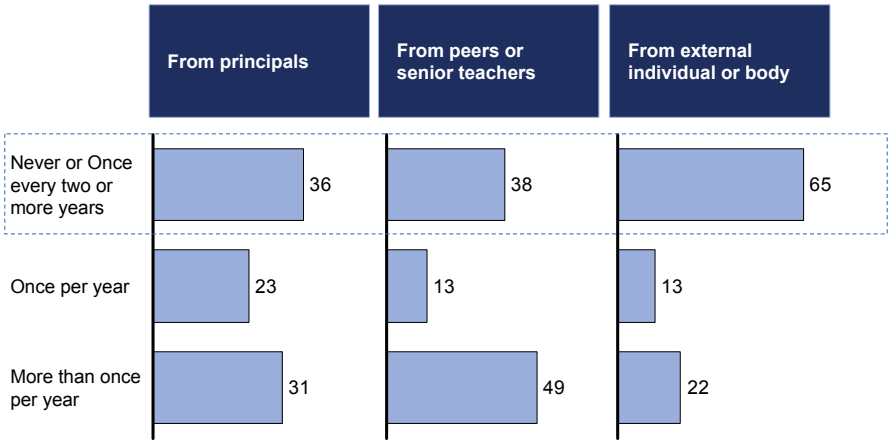
The third lever that was highlighted for improving teaching and school leadership system-wide was performance management. The starting point, of course, is a clear articulation of what good teaching or leadership should demonstrate. This is one application of normative models, such as Victoria's E^5 – you can only effectively assess performance against some criteria of good and bad practice, and normative models help make those criteria explicit.

In general, feedback and appraisals are few and far between across most systems. A surprising number of teachers do not receive regular appraisal or feedback (40-65% of teachers across the Organisation for Economic Cooperation and Development according to one of its reports). That is especially unfortunate because the evidence shows that teachers value appraisal (***Exhibits 21 and 22)***. The 2009 TALIS indicated that appraisal and feedback usually increase teacher job satisfaction (***Exhibits 23 and 24)***.

Exhibit 21

A surprising number of teachers across OECD systems do not receive regular appraisal or feedback

Teacher reported frequency of appraisal and/or feedback
Percent (TALIS average[1])



1 TALIS Survey was conducted in 23 OECD and partner countries: [OECD] – Australia, Austria, Flemish Belgium, Denmark, Hungary, Iceland, Ireland, Italy, Korea, Mexico, Norway, Poland, Portugal, Slovak Republic, Spain, and Turkey; [Partner countries] – Brazil, Bulgaria, Estonia, Lithuania, Malaysia, Malta, Slovenia

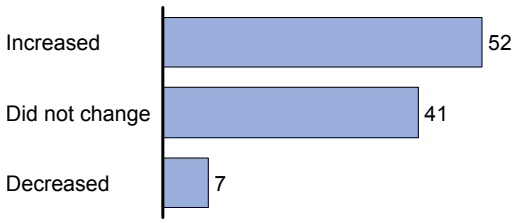
SOURCE: Teaching and Learning International Survey (TALIS) first results, OECD, 2009,

Exhibit 22

Appraisal and feedback usually increase teacher job satisfaction

Impact of appraisal and feedback on teachers' job satisfaction

Percentage of teachers who reported the following change to job satisfaction following the appraisal and/or feedback they received in their school, TALIS[1]



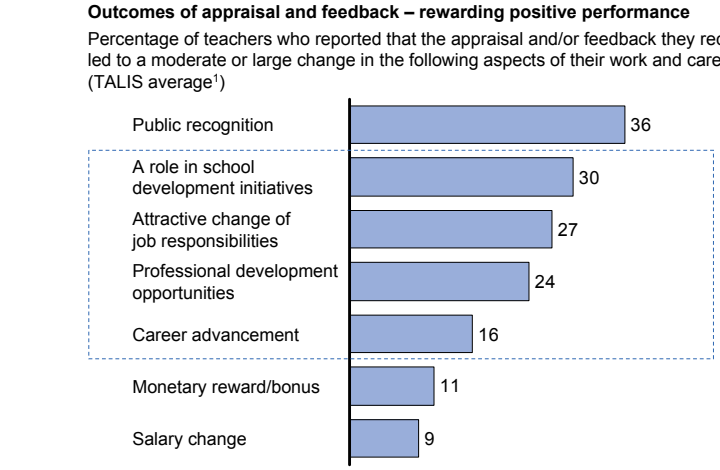
Appraisal and feedback also had a positive impact on teachers performance, with ~40% of teachers reporting that it made significant differences in their teaching

1 TALIS Survey was conducted in 23 OECD and partner countries: [OECD] – Australia, Austria, Flemish Belgium, Denmark, Hungary, Iceland, Ireland, Italy, Korea, Mexico, Norway, Poland, Portugal, Slovak Republic, Spain, and Turkey; [Partner countries] – Brazil, Bulgaria, Estonia, Lithuania, Malaysia, Malta, Slovenia

SOURCE: Teaching and Learning International Survey (TALIS) first results, OECD, 2009,

Exhibit 23

Less than a third of teachers say appraisals make a direct difference to their professional opportunities

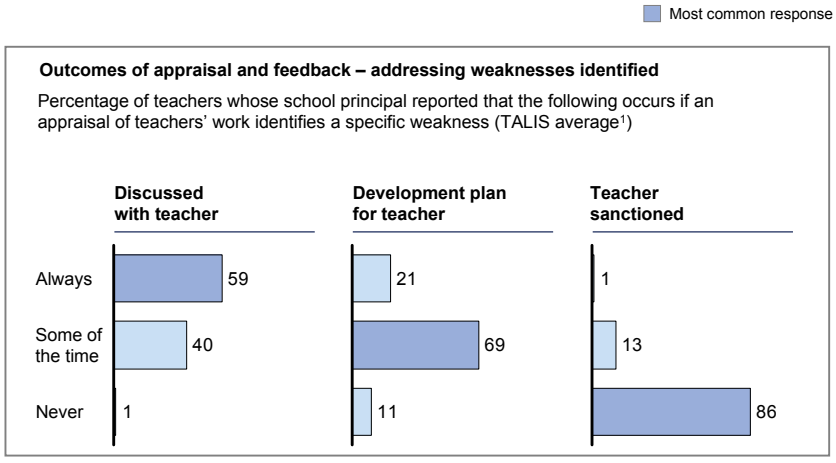


1 TALIS Survey was conducted in 23 OECD and partner countries: [OECD] – Australia, Austria, Flemish Belgium, Denmark, Hungary, Iceland, Ireland, Italy, Korea, Mexico, Norway, Poland, Portugal, Slovak Republic, Spain, and Turkey; [Partner countries] – Brazil, Bulgaria, Estonia, Lithuania, Malaysia, Malta, Slovenia

SOURCE: Teaching and Learning International Survey (TALIS) first results, OECD, 2009,

Exhibit 24

While identified weaknesses are discussed, they are less often acted upon



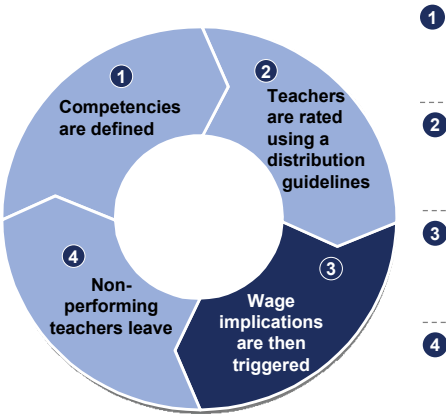
1 TALIS Survey was conducted in 23 OECD and partner countries: [OECD] – Australia, Austria, Flemish Belgium, Denmark, Hungary, Iceland, Ireland, Italy, Korea, Mexico, Norway, Poland, Portugal, Slovak Republic, Spain, and Turkey; [Partner countries] – Brazil, Bulgaria, Estonia, Lithuania, Malaysia, Malta, Slovenia

SOURCE: Teaching and Learning International Survey (TALIS) first results, OECD, 2009,

Further exacerbating the problem is that when appraisals do happen, their impact is too often weak, with inadequate follow-up. Fortunately there are examples of systems that rigorously review, appraise, and follow-through on performance. For example, Victoria and Singapore have regular and well-developed appraisal cycles. Both of these systems' cycles have three phases: an initial plan at the start of the year, a mid-year review that is largely formative and a final evaluation that is more summative in nature. Singapore also has an established performance-linked compensation structure, which is rare among school systems (*Exhibit 25*). While some other systems are also experimenting with performance-based pay, such as Washington DC, performance-based pay is not a reality for most systems and staff, and the case for its application has not been widely proven (*Exhibit 26*).

Exhibit 25

Singapore has an established system of performance-based compensation



1 **Competencies are defined** identifying the skills and knowledge expected. Detailed descriptions of the competencies, and suggestions for improvement, are provided

2 **Distribution guidelines** are approximately normal, allowing differentiation between performance levels

3
- **A-rated teachers get bonus of up to 3.25 months salary (bonus pool varies by year)**
- C-rated teachers' average bonuses are equivalent to their salary for 1.5 months

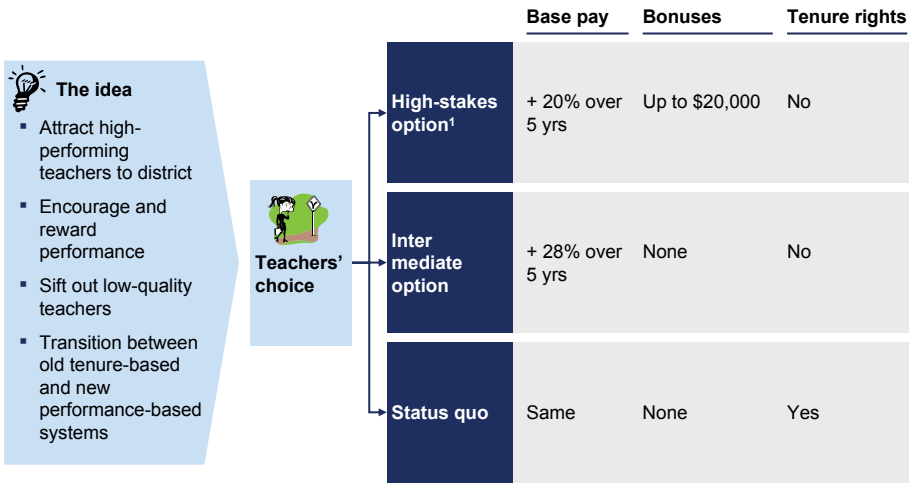
4
- E-graded performers put in a performance review for 6-9 months (termination possible)

The effectiveness of this system relies on robust evaluation and highly capable school principles

SOURCE: Team Analysis; NIE

Exhibit 26

Washington DC is attempting a transition to performance-based pay by offering teachers the choice to opt-in



1 All new hires would be enrolled in this option; passing of plan currently under contract review

SOURCE: "Pay-Hike Plan for Teachers in D.C. Entails Probation", Washington Post, 24 July 2008

Developing leadership talent

The influence of school leaders on both student outcomes and teacher satisfaction and retention raises the stakes for the development of great school leadership (*Exhibit 27*). As with teaching, the starting point is a model of what constitutes school leadership; and as with teaching there is good agreement on what that model includes. It includes fulfilling three roles: administrative leadership, change leadership, and instructional leadership. This usually means that school leaders must shift away from largely administrative roles to focus more on instructional leadership, by setting learning expectations, supporting teachers in developing teaching plans, observing classes and coaching teachers, facilitating PLCs, and thus relentlessly focusing the school culture on improving instruction to improve student outcomes. It is important to be clear that school leadership in this context does not just mean the principal. The responsibilities of school leadership – administration, change management and instruction leadership – can be shared by a senior teachership team. For example, some systems have appointed school administrators to allow principals, vice-principals, and senior teachers to focus on instruction. A good example is the development of school business management as a formal profession in the UK.

Exhibit 27

School leaders can have a significant direct impact on student outcomes

	Key research findings
Provide instructional leadership	▪ Leaders who promote and participate in teacher learning and development (e.g., through regular classroom visits, and the provision of formative and summative feedback) have an effect size estimate (ES) on student outcomes of 0.84 ▪ School leaders who take an active role in planning, coordinating and evaluating teaching and the curriculum have an ES on student outcomes of 0.42
Act as system's primary change agents	▪ School leaders develop and articulate a vision for their school and typically have primary responsibility for ensuring strong student outcomes are achieved. Research has shown that school leaders' efforts to establish goals and expectations, challenge the status quo, and foster a culture of cooperation can have a positive impact on student achievement (ES of 0.35)
Ensure a supportive, orderly environment	▪ School leaders' activities related to ensuring sufficient time for teaching and learning by reducing external pressures and interruptions, and establishing an orderly and supportive environment both inside and outside classrooms, can have yet another positive impact on student outcomes (ES of 0.27)

Note: Summary of key research findings in Appendix

SOURCE: Waters, Tim,"School Leadership That Works" (2003); Robinson, Viviane, "School Leadership and Student Outcomes" (2007); team analysis

As with teaching, systems also need to support leaders to develop their capabilities (*Exhibit 28)*. IER participants noted the importance of leadership training for principals. Leadership development after all is a major concern in every sector and should be in education. That support may come in the form of a professional coach (such as an experienced educator or an executive leadership coach), leadership courses, and/or peers. Peer networks – such as a cluster of principals from schools close to each other – also provide support for a role that can be uniquely lonely in schools. For example, candidates for principalship in Singapore undergo the rigorous 6-month full-time Leaders in Education Programme, followed by mentoring from experienced school leaders and informal support from principals in the same cluster of schools.

Exhibit 28

Taking great teaching practice and school leadership to scale across a system

- With increasingly diverse classrooms, more reforms, and changing demands of education, the challenge of being a teacher or a leader is only increasing. Having great teachers and school leaders requires recruiting and retaining excellent professionals.
- To retain excellent teachers we need to provide a proper supportive environment. That includes high quality school; curriculum, resource, and developmental support from system administration; community support; and peer support through collaboration with each other.
- It is important to establish a shared understanding across the system about what great teaching practice looks like, and then work towards it.
- It is also important to link teachers and principals pre-service preparation and in-service development as closely as possible to their real-life professional experience.
- Effective leadership development across a system is a very cost-effective way to drive up performance.

The conversation has only just begun

The demands of schools systems and the professionals within them will increase in variety and complexity over the next 10 to 20 years. While we cannot predict with any certainty what specific capabilities and characteristics students will need for success in work and life in the future, it is clear that those requirements will be different from the ones we have today, and will be influenced by the rapid changes in the social and economic landscape (for example, globalisation, access to information and climate change). The rate of technological innovation will also shape what is required of education systems. However, technological innovation offers, and will continue to offer, new opportunities to help students learn. From reaching more students to shifting the ownership of learning into students' hands, ICT has tremendous potential to transform and dramatically improve teaching and learning, but unfortunately that potential is as yet unrealised. All of this – that is, both meeting the challenges ahead and capitalising on the opportunities offered by innovation – will require excellent teachers and school principals. That will remain as true tomorrow as it is today, and ensuring systems recruit, retain, develop and motivate the people who become teachers and principals will continue to be a major challenge.

The discussion at the IER contributed to an understanding of the different experiences and challenges of each participating system, and identifying the many shared challenges and opportunities across them. It is possible to detect a trend towards international dialogue about system reform over the last decade or so. When the first international benchmarking reports were published the first (and often only) reaction of system leaders was to see where their system was in the rankings. Then system leaders, especially those of systems that did less well than expected, tried to analyse their performance and act on that analysis. Now – and the IER is a leading example of this in practice – system leaders are seeking to be part of an international dialogue about system improvement. For this reason, as systems engage in dialogues about the changing demands and provision of education with stakeholders at home, they will surely also seek continuous dialogue with peers abroad about how to rise to the challenges and seize the opportunities of the future. The 2009 IER dialogue was the start of a conversation that will need to continue.

Summary statements from the International Education Roundtable in Singapore

- The skills that students will need in 20 years will be different from what they are provided with now and cannot be fully predicted
- One objective that will continue to be important is equity. We need to ensure all children can succeed while enabling some children to push the limits of educational potential
- We will also need to review our assessment systems to match the outcomes that will be required of schooling in the future
- Explaining and discussing these imperatives with communities both outside and inside schools are important challenges for educational and political leaders
- Information and communication technology (ICT) is a transformational force for education. The challenge our systems face is how to, system-wide, use ICT to unlock the potential of students and put power in their hands as learners
- Effective system-wide use of ICT will require combining technology (hardware, software, maintenance, and support) and capability (teachers' and school leaders') with a coherent ICT strategy, including:
  - Embedding ICT in day-to-day learning, rather than setting up a separate computer lab
  - Transparency on learning: gather and respond to feedback from students
  - System transparency: managing and using large amounts of data
  - Equity and tailoring: provide cost-efficient high-quality learning to remote and/or small groups of learners
  - Online collaboration through networks
  - Assessment formats and tools
  - Research and development
  - Blending ICT's use with human interaction, recognizing that the power of ICT technology in its combination with human interaction
- The challenge for teaching and leadership development is enormous given all of the above. Systems will need:
  - To recruit top talent into teaching and school leadership...even the best systems are not and cannot be complacent
  - To support and manage our teachers and leaders to be successful (and to retain them)
  - To establish a normative model of teaching practice and then embed it in daily instruction and in professional development
  - To offer leadership development to school leaders

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