Building a High-Quality Teaching Profession

LESSONS FROM AROUND THE WORLD

Andreas Schleicher



Background Report for the International Summit on the Teaching Profession

OECD

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Foreword

Teachers and school leaders are being challenged to transform educational outcomes, often under difficult conditions. They are being asked to equip students with the competencies they need to become active citizens and workers in the 21st century. They need to personalize learning experiences to ensure that every student has a chance to succeed and to deal with increasing cultural diversity in their classrooms and differences in learning styles. They also need to keep up with innovations in curricula, pedagogy and the development of digital resources.

The challenge is to equip all teachers, and not just some, for effective learning in the 21st century. This will require rethinking of many aspects, including: how to optimize the pool of individuals from which teacher candidates are drawn; recruiting systems and the ways in which staff are selected; the kind of initial education recruits obtain before they start teaching, how they are monitored and inducted into their service, and the continuing education and support they get; how their compensation is structured; and how the performance of struggling teachers is improved and the best performing teachers are given opportunities to acquire more status and responsibility.

Recognizing that addressing these challenges requires teachers not just to improve educational outcomes in classrooms, but to be at the centre of the improvement efforts themselves and to embrace and lead reform, the U.S. Department of Education, the OECD and Education International brought education ministers, union leaders and other teacher leaders together in the first International Summit on the Teaching Profession in March 2011 in order to explore effective policy responses.

This publication summarizes the evidence that underpinned the Summit and reflects on the lessons that have been learned. It looks at system features that shape successful teacher careers and work environments as well as at the processes that can make educational reform effective. While some issues around effective teacher policies continue to be discussed controversially, the Summit participants agreed that significant improvement is possible. Contrary to what is often assumed, a high-quality teaching force is not due simply to a traditional cultural respect for teachers but is a result of deliberate policy choices, carefully implemented over time. The many examples of reforms in this publication that have produced specific results, show promise or illustrate imaginative ways of implementing change, show how the challenges have been addressed.

The publication was drafted by Andreas Schleicher, in consultation with the Summit co-sponsors – the U.S. Department of Education, Education International, the National Education Association, the American Federation of Teachers, the Council of Chief State School Officers, the Asia Society and the New York Public Television station WNET – based on the *OECD Programme for International Student Assessment* (PISA) reports;[1] the *OECD Teaching and Learning International Survey* (TALIS);[2] the OECD's comparative policy review *Teachers Matter;*[3] the reports of the ILO/UNESCO Committee of Experts on the Application of the Recommendations concerning Teaching Personnel; the OECD's annual data collection *Education at a Glance*; the OECD's report *Strong Performers and Successful Reformers;*[4] the OECD's review of *Evaluation and Assessment Frameworks for Improving School Outcomes;*[5] the OECD's study *Evaluating and Rewarding the Quality of Teachers – International Practices;*[6] the OECD's report *Making Reform Happen;*[7] and the outcomes from the recent meeting of OECD Education Ministers in November 2010.

Angel Gurría
OECD Secretary-General



Table of Contents

INTRODUCTION 9

CHAPTER 1 **RECRUITMENT AND INITIAL PREPARATION OF TEACHERS** 13
- Making teaching an attractive career choice 14
- Ensuring high-quality initial teacher education 19

CHAPTER 2 **TEACHER DEVELOPMENT, SUPPORT, EMPLOYMENT CONDITIONS AND CAREERS** 23
- Meeting the need for professional development 24
- Fostering an environment for effective teacher collaboration 29
- Establishing effective employment conditions 32
- Providing for attractive careers 36

CHAPTER 3 **TEACHER EVALUATION AND COMPENSATION** 39
- In search of an effective teacher appraisal system 40
- Maximizing the impact of teacher appraisal 42
- Designing effective compensation systems 45

CHAPTER 4 **TEACHER ENGAGEMENT IN EDUCATION REFORM** 55
- Achieving educational reform that works 56
- Securing a strategic relationship between government and teachers' unions 60

CONCLUSION 63

NOTES 65

REFERENCES 69

ANNEX A 71



BOXES

Box 1.1 Throughout Singapore, teaching talent is identified and nurtured rather than being left to chance 15
Box 1.2 Reversing teacher shortages in the United Kingdom 16
Box 1.3 Teachers and schools take on responsibility for reform in Finland 17
Box 1.4 Preparing teachers to lead improvement 21

Box 2.1 Innovative teacher-preparation programs in the United States 27
Box 2.2 Providing greater career diversity in Australia, England and Wales, Ireland and Quebec (Canada) 36
Box 2.3 Addressing the scale of professional development 38

Box 3.1 Individual pay in Sweden 47
Box 3.2 Identifying and certifying outstanding teachers 47
Box 3.3 Linking pay to work 48
Box 3.4 A comprehensive approach to teacher appraisal and compensation in Singapore 52
Box 3.5 Towards the next TALIS survey 53

Box 4.1 Involving unions in reform in Australia 59
Box 4.2 Building trust in Finland 59
Box 4.3 School-level teacher involvement in Sweden 60
Box 4.4 Successful collaboration in Ontario 61
Box 4.5 Transforming government-union relations in the United States 62
Box 4.6 Establishing career incentives in Norway 62

FIGURES

Figure 1.1 Teacher salaries relative to workers with college degrees 19

Figure 2.1 Percentage of teachers without mentoring and induction 25
Figure 2.2 Comparison of impact and participation by types of development activity 26
Figure 2.3 Reasons for not taking more professional development 26
Figure 2.4 Areas of greatest need for teacher professional development 29
Figure 2.5 Support for professional development 30
Figure 2.6 Students' views of teacher-student relations 31
Figure 2.7 How much autonomy individual schools have over resource allocation 33

Figure 3.1 Percentage of teachers without appraisal in the last 18 months 41
Figure 3.2 Criteria for teacher appraisal and feedback 42
Figure 3.3 Impact of teacher appraisal on career 43
Figure 3.4 Consequences of teacher performance as reported by teachers 44
Figure 3.5 School principals' views of their involvement in school matters 46
Figure 3.6 Criteria for additional payments in public institutions 49

Figure A.1 Comparing countries' performance in reading 72
Figure A.2 Comparing countries' performance in mathematics 73
Figure A.3 Comparing countries' performance in science 74
Figure A.4 Relationship between school average socio-economic background and school resources 75
Figure A.5 School principals' views of how teacher behaviour affects students' learning 76
Figure A.6 School principals' views of their involvement in school matters 77
Figure A.7 Selected characteristics of school systems with reading performance above the OECD average 78
Figure A.8 Students' views of how conducive classrooms are to learning 79
Figure A.9 Students' views of how well teachers motivate them to read 80
Figure A.10 School principals' views of how teacher behaviour affects students' learning 81
Figure A.11 How much autonomy individual schools have over resource allocation 82
Figure A.12 How much autonomy individual schools have over curricula and assessments 83

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TABLES

Table A.1 Average class size, by type of institution and level of education (2008) 84

Table A.2 Ratio of students to teaching staff in educational institutions (2008) 85

Table A.3 Teachers' salaries (2008) 86

Table A.4 Organization of teachers' working time (2008) 88

Table A.5 Number of teaching hours per year (1996, 2008) 89

Table A.6 Participation of teachers in professional development in the previous 18 months (2007-08) 90

Table A.7 Amount of professional development undertaken by teachers in the previous 18 months (2007-08) – teacher characteristics 91

Table A.8 Amount of professional development undertaken by teachers in the previous 18 months (2007-08) – school characteristics 92

Table A.9 Types of professional development undertaken by teachers (2007-08) 92

Table A.10 Teachers who wanted to participate in more development than they did in the previous 18 months (2007-08) 93

Table A.11 Teachers' high professional development needs (2007-08) 94

Table A.12 Support for professional development undertaken by teachers (2007-08) 95

Table A.13 Frequency of mentoring and induction programmes (2007-08) 95

Table A.14 Reasons for not participating in more professional development (2007-08) 96

Table A.15 Impact of different types of professional development undertaken by teachers (2007-08) 96



Introduction

The first International Summit on the Teaching Profession brought together education ministers, union leaders and other teacher leaders from high-performing and rapidly improving education systems to review how best to improve teacher quality and the quality of teaching and learning. This publication brings together evidence that underpinned the Summit considering four interconnected themes: how teachers are recruited into the profession and trained initially; how teachers are developed in service and supported; how teachers are evaluated and compensated; and how teachers are engaged in reform. It also underlines the importance of developing a positive role for teachers in educational change and how a collaborative model of educational reform can be highly effective.



A great challenge for educators is that the things that are easiest to teach and test, are also the things easiest to digitize, automate and outsource.

Many countries have seen rapidly rising numbers of people with higher qualifications. But in a fast-changing world, producing more of the same education will not suffice to address the challenges of the future. Perhaps the most challenging dilemma for teachers today is that routine cognitive skills, the skills that are easiest to teach and easiest to test, are also the skills that are easiest to digitize, automate and outsource. A generation ago, teachers could expect that what they taught would last for a lifetime of their students. Today, where individuals can access content on Google, where routine cognitive skills are being digitized or outsourced, and where jobs are changing rapidly, education systems need to place much greater emphasis on enabling individuals to become lifelong learners, to manage complex ways of thinking and complex ways of working that computers cannot take over easily. Students need to be capable not only of constantly adapting but also of constantly learning and growing, of positioning themselves and repositioning themselves in a fast changing world.

These changes have profound implications for teachers, teaching and learning, requiring a shift from delivered wisdom to user-generated wisdom...

These changes have profound implications for teachers, teaching and learning. In the past, the policy focus was on the provision of education, today it is on outcomes, shifting from looking upwards in the bureaucracy towards looking outwards to the next teacher, the next school. The past was about delivered wisdom, the challenge now is to foster user-generated wisdom among teachers in the frontline. In the past, teachers were often left alone in classrooms with significant prescription what to teach. The most advanced education systems now set ambitious goals for students and are clear about what students should be able to do, and then prepare their teachers and provide them with the tools to establish what content and instruction they need to provide to their individual students.

...from standardization and conformity towards personalized educational experiences, and...

In the past, different students were taught in similar ways, today teachers are expected to embrace diversity with differentiated pedagogical practices. The goal of the past was standardization and conformity, today it is about being ingenious, about personalizing educational experiences; the past was curriculum-centered, the present is learner centered. Teachers are being asked to personalize learning experiences to ensure that every student has a chance to succeed and to deal with increasing cultural diversity in their classrooms and differences in learning styles, taking learning to the learner in ways that allow individuals to learn in the ways that are most conducive to their progress.

...from schools organized like assembly lines towards a work organization that supports high-level knowledge workers.

The kind of teaching needed today requires teachers to be high-level knowledge workers who constantly advance their own professional knowledge as well as that of their profession. But people who see themselves as knowledge workers are not attracted by schools organized like an assembly line, with teachers working as interchangeable widgets in a bureaucratic command-and-control environment. To attract and develop knowledge workers, education systems need to transform the work organization of their schools to an environment in which professional norms of management complement bureaucratic and administrative forms of control, with the status, pay, professional autonomy, and the high-quality education that go with professional work, and with effective systems of teacher evaluation, with differentiated career paths and career diversity for teachers.

Many aspects of teacher policies need to be reconsidered.

All this requires rethinking of many aspects of teacher policies, including: how to optimize the pool of individuals from which teacher candidates are drawn; recruiting systems and the ways in which staff are selected; the kind of initial education recruits obtain before they start their job and how they are monitored and inducted into their service and the continuing education and support they get; how their compensation is structured; and how the performance of struggling teachers is improved and the best performing teachers are given opportunities to acquire more status and responsibility. In short, just as the quality of an education system cannot exceed the quality of its teachers, the quality of teaching and teachers cannot exceed the quality of the work organization in which teachers find themselves, the quality of teacher selection and education, the quality of teacher careers and the quality of teacher evaluation.

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Results from the OECD's *Programme for International Student Assessment (PISA)* have shown that the degree to which education systems succeed in equipping students with important foundation skills varies significantly (for data see Annex A).

PISA suggests that success is possible and that learning across cultural and national boundaries can be a rich source of information for the development of effective teacher policies.

Since the quality of teaching is at the heart of the observed student learning outcomes, it was an appealing idea to bring together education leaders from high performing and rapidly improving education systems to explore to what extent educational success and some of the policies related to success transcend the specific characteristics of cultures and countries.

To this end, in March 2011 the first ***International Summit on the Teaching Profession*** was held in New York, hosted by the U.S. Department of Education, the OECD and Education International. The Summit brought together education ministers, union leaders and other teacher leaders from high-performing and rapidly improving education systems[8] to review how best to improve teacher quality and the quality of teaching and learning.

The first International Summit on the Teaching Profession brought together education ministers, union leaders and other teacher leaders from high-performing and rapidly improving education systems...

The pre-Summit version of this publication underpinned the Summit with available evidence about what can make teacher-oriented reforms effective, and highlighted examples of reforms that have produced specific results, show promise or illustrate imaginative ways of implementing change.

The Summit was organised around four interconnected themes. Of the four themes, the first three looked at system features that shape particular aspects of teachers' professional careers. The fourth theme looked at process, and considered what can make reform effective. Specifically, the post-Summit publication considers:

...and this publication brings together available evidence underpinning the Summit.

1. ***How teachers are recruited into the profession and trained initially.*** In face of widespread shortages that, in many countries, will soon grow as large cohorts retire, intelligent incentive structures are needed to attract qualified graduates into the teaching force. Pay levels can be part of this equation. However, countries that have succeeded in making teaching an attractive profession have often done so not just through pay, but by raising the status of teaching, offering real career prospects, and giving teachers responsibility as professionals and leaders of reform. This requires teacher education that helps teachers to become innovators and researchers in education, not just deliverers of the curriculum.
2. ***How teachers are developed in service and supported.*** Surveys show large variations across and within countries in the extent of professional development. Not only the quantity but also the nature of this activity is critical. Often, the professional development of teachers is disjointed in one-off courses, while teachers interviewed for the Teaching and Learning International Survey (TALIS) reported that the most effective development is through longer programs that upgrade their qualifications or involve collaborative research into improving teaching effectiveness. TALIS also shows that in expanding opportunities, teachers have often played a significant role in sharing the cost of development: those who did have tended to get more out of it, as did those who make development a collaborative activity, working together with colleagues to improve practices. A further issue related to supporting teachers in service is the extent to which their conditions of employment and their career prospects can be adapted to meet their needs and aspirations.
3. ***How teachers are evaluated and compensated.*** Results from TALIS show that, at its best, appraisal and feedback is supportive in a way that is welcomed by teachers. It can also help lead to self-improvement and be part of efforts to involve teachers in improving schools. At present, most teachers do not feel that school leaders use appraisal to recognize good performance, which suggests that a key component of appraisal is appropriate training for those conducting the appraisals. A connected issue, which also requires sensitive handling, is the criteria used to link rewards with performance. Whatever system is used must be fair, based on multiple measures, and transparently applied in ways that involve the teaching profession.



4. ***How teachers are engaged in reform.*** Fundamental changes to the status quo can cause uncertainties that trigger resistance from stakeholders; and without the active and willing engagement of teachers, most educational reforms fail. The chances for success in reform can improve through effective consultation, through a willingness to compromise and, above all, through the involvement of teachers in the planning and implementation of reform. In moving beyond consultation to involvement, the reform process becomes oriented towards transforming schools into learning organizations, with teaching professionals in the lead.

The chapters in this publication and the issues they deal with should not be considered in isolation. In fact, their interdependence is key to understanding the nature of the policy and implementation challenges. For example, simply raising entrance standards for teachers will choke off the supply of teachers unless compensation and working conditions are aligned. Raising pay and changing working conditions alone will not automatically translate into improvements in teacher quality unless standards are raised. Teacher evaluation systems will have limited impact if they only relate to compensation but not professional development and career advancement. Giving teachers more autonomy can be counterproductive if the quality and education of the teachers are inadequate. Not surprisingly, therefore, one of the main conclusions of the Summit was that in order to succeed, teacher policies cannot just tackle one small piece of the puzzle at a time but must be part of a comprehensive approach.[9]



Chapter 1

RECRUITMENT AND INITIAL PREPARATION OF TEACHERS

Education systems face a demanding challenge in recruiting high-quality graduates as teachers, particularly in shortage areas. At the Summit, Brazil and China reported how they are wrestling with getting good teachers into their vast rural areas; Japan and several other countries reported on planning for large-scale imminent retirements; the United States expressed concerns about high attrition rates, with teachers simply leaving the profession; the Netherlands reported on how decisions on class-size reductions had increased the demand for teachers and Belgium noted that the teaching force does not reflect the increasing diversity of the population.[10]

Various countries have employed a range of strategies to help them address these challenges. Competitive compensation, career prospects, career diversity, and giving teachers responsibility as professionals are important aspects of this. Active recruitment campaigns can emphasize the fulfilling nature of teaching as a profession, and seek to draw in groups who might not otherwise have considered teaching. Where teaching is seen as an attractive profession, its status can further be enhanced through selective recruitment that makes teachers feel that they will be going into a career sought after by high-fliers. All this also requires initial education to prepare new teachers to play an active role in the design and running of education, rather than just following standardized practices.



MAKING TEACHING AN ATTRACTIVE CAREER CHOICE

Getting it right from the start.

One of the main conclusions of the Summit has been that high-performing systems build their human resource systems by putting the energy up front in attracting, training and supporting good teachers rather than on the back end of reducing attrition and firing weak teachers.[11]

Education systems can recruit high-quality teachers not just through adequate pay but also by providing an environment in which teachers work as professionals...

The OECD Programme for International Student Assessment (PISA) shows that the best-performing education systems provide most of their students with the kind and quality of education that average performers provide only for a small elite. That requires them to deliver excellent teaching for all students. In order to achieve this, national policy reviews show that they often aim to recruit their teachers from the same pool from which all their top professionals are recruited. But people who see themselves as candidates for the professions, and the working conditions enjoyed by professionals, may not be attracted to schools organized in prescriptive work environments that use bureaucratic management to direct their work.

The Summit participants reported how they have transformed the work organization in their schools by complementing administrative forms of management with professional norms that provide the status, pay, professional autonomy, and high-quality professional education and responsibility that go with professional work. They also discussed effective systems of social dialogue. Finally, they discussed how to supply attractive forms of employment that balance flexibility with job security and grant sufficient authority for schools to manage and deploy their human resources.

...and in doing so, must look carefully at the state of labor supply and demand, and consider strategies both to bring people into teaching generally and to address specific shortages.

Even where the recruitment of the most highly qualified graduates remains a challenge, policy makers tend to acknowledge that the quality of teaching is strongly affected by the pool of talent from which teachers are recruited. The pool from which an industry selects its professionals is influenced by some combination of the occupational status, work environment, sense of personal contribution and the financial rewards associated with a given profession. Teacher policy needs to examine these aspects closely, particularly in light of teacher shortages that many advanced economies already face and that will grow in the near future as large numbers of teachers reach retirement age.[12] Even where general teacher supply and demand are in balance, many countries face shortages of specialist teachers and shortages in schools serving disadvantaged or isolated communities.

Policy responses are needed at two levels. The first concerns the nature of the teaching profession itself and teachers' work environment. These policies seek to improve the profession's general status and competitive position in the job market. The second involves more targeted responses to particular types of teacher shortages. It recognizes that that there is not a single labor market for teachers, but a set of them, distinguished by school type and characteristics such as subject specialization.[13] Surveys of what teachers themselves value about their work also provide important insights into what needs to be emphasized in recruitment: the social relevance of teaching; working with young people; creativity; autonomy; and working with colleagues.

Various countries have shown that policy can have a significant impact on the attractiveness of teaching.

It is important to note that the status of the teaching profession is not just a static attribute of culture but has, in some countries, changed significantly. As shown in the boxes on Singapore (Box 1.1), England (Box 1.2) and Finland (Box 1.3), vigorous intervention that directly addresses the attractiveness of teaching compared to other graduate professions can make a big difference. Interesting approaches towards recruitment pursued by some countries include:

- Promotional programs targeted at groups who are "non-traditional" entrants to teaching.
- Broadening selection criteria for new teachers, with the aim of identifying applicants with the greatest potential, including interviews, preparing lesson plans, and demonstrating teaching skills.

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- Changing the role of seniority in determining teacher assignments, to avoid situations where new teachers are assigned to the more difficult and unpopular schools, further disadvantaging students there as well as potentially damaging teachers' career development.
- For desirable teaching jobs, sometimes qualities that are harder to measure, such as enthusiasm, commitment and sensitivity to students' needs, are given greater weight in applications, where these are seen to be more directly related to the quality of teaching and learning than the traditional emphases on qualifications and years of experience.

Box 1.1. Throughout Singapore, teaching talent is identified and nurtured rather than being left to chance

Singapore is notable for its comprehensive approach to identifying and nurturing teaching talent. Singapore carefully selects young people from the top one-third of the secondary school graduating class whom the government is especially interested in attracting to teaching and offers them a monthly stipend, while still in school, that is competitive with the monthly salary for fresh graduates in other fields. In exchange, these teachers must commit to teaching for at least three years. Strong academic ability is viewed as essential, as is commitment to the profession and to serving diverse student bodies. Interest in teaching is seeded early through teaching internships for high school students; there is also a system for mid-career entry, which is seen as a way of bringing real-world experience to students. Singapore keeps a close watch on occupational starting salaries and adjusts the salaries for new teachers accordingly. In effect, the country wants its most qualified candidates to regard teaching as just as attractively compensated as other professions.

After three years of teaching, teachers are assessed annually to see which of three career paths would best suit them – master teacher, specialist in curriculum or research or school leader. Each path has salary increments. Teachers with potential as school leaders are moved to middle management teams and receive training to prepare them for their new roles. Middle managers' performance is assessed for their potential to become vice principals, and later, principals. Each stage involves a range of experience and training to prepare candidates for school leadership and innovation. In Singapore, young teachers are continuously assessed for their leadership potential and given opportunities to demonstrate and learn, for example, by serving on committees, then being promoted to head of department at a relatively young age. Some are transferred to the ministry for education for a period. Potential principals are selected for interviews and go through leadership situational exercises.

Last but not least, research shows that people who have close contact with schools – such as parents who assist in classrooms, or employers who have students in workplace learning programs – often have much more positive attitudes towards teachers than people with little direct contact. This suggests that building stronger links between the schools and the community can help to enhance the status of teaching. Teachers and school leaders can play a key role in strengthening connections with families and communities as part of effective learning. This can involve eliciting greater support from stakeholders with traditional expectations about teaching by communicating current knowledge about what makes learning effective. Personalized relationships with learners and their families can be part of this process, as can after-school and extra-curricular programs, support for families as learning environments, and making the links more explicit between formal learning and life after schooling.

Attractive conditions can improve morale, lower turnover and widen the teacher pool.

Employers increasingly recognize the need to provide workers with a good work-life balance and opportunities to combine work with family responsibilities and other activities. Some countries allow part-time teaching or opportunities throughout the career to gain experience outside schools through sabbatical leave, extended leave without pay, and job exchanges with industry. Although all such initiatives involve costs, those costs need to be set against the benefits of lower staff turnover, improved morale, and introducing new knowledge and skills into schools.



Box 1.2. Reversing teacher shortages in the United Kingdom

The education authorities tackled a severe teacher shortage in England by addressing pay and work environment and launching a powerful recruitment campaign.

When the Blair Administration took office in 1997, they had less than 28 000 teacher entrants for a system that needed 35 000. Four years later, they had raised the teacher entrants number up to 40 000 and it kept rising, and this was during an economic boom when everyone else was recruiting for the best and brightest. To some extent this had to do with raising compensation significantly, as well as with important changes in teachers' work environment; but a sophisticated and powerful recruiting program played a very important part in the turnaround.

The recruitment campaign, was launched with strong political and financial backing, by the Training and Development Agency (TDA) in 2000. An extra GBP 150 million was allocated to: (1) Employing leading international advertising and recruitment agencies to undertake extensive market research on the motivations and barriers to becoming a teacher, and to develop award winning marketing strategies. (2) Offering a new GBP 6 000 training bursary to all trainees, as a one-off, tax-free payment to support them through their training. A "golden hello" was also introduced, of up to GBP 4 000. This amount was to be paid on employment, depending on which subject trainees were teaching. Teachers of subjects which were especially short of teachers, such as mathematics and physics, received the full amount.

By focusing on the idea of teaching "making a difference", the new campaign aimed to improve the status of teaching as a profession. It also emphasized the flexibility and diversity of the skills teachers acquire, the variety of routes into teaching and the possibility of doing it as a "first career" before moving onto other things. The advertising approach was very direct, encouraging people to call a national information line, which also allowed the TDA to collect data on people who were considering teaching and to target those with skills in shortage subjects such as mathematics and physics students.

One of the TDA's central aims was to understand its "customers" better. It divided the student population into three broad categories: (1) those planning on teaching; (2) those considering teaching; and (3) those not considering teaching. Originally, the majority of the TDA's efforts went into recruiting teachers from the "might teach" category (2). They wanted to encourage people who were seriously considering teaching as an option, but were put off by various barriers – such as the financial burden of the training. In order to refine its campaign further, the TDA then undertook more in-depth market research on potential teaching recruits. It divided the market into three main categories of potential recruits: (a) Undergraduates and recent graduates – students looking for their first job on leaving university. (b) Career finders – young people aged around 25-30 who had left university and not settled into a graduate career, but who were now looking for a career. (c) Career changers – people who had embarked on a career, but were looking for a career which would bring them more job satisfaction. During the last decade the proportion of career finders and changers amongst teacher training recruits has grown – in 2009 about 50% of teacher training recruits were over 25. This was reflected in new advertising slogans – such as "Use your head: teach" – to appeal to people not making full use of their graduate skills in their current jobs. The latest campaign, "Turn your talent to teaching", is designed to appeal to all three categories of potential recruits.

After extensive profiling of potential recruits, the advertising agency also developed the profile of "self-interested idealists" to define potential teachers, and to shape the marketing campaigns. This acknowledged that potential teachers were motivated by making a difference and putting something back, but that they also wanted to enter a profession which would give them financial and personal satisfaction rewards.

To broaden the potential pool of teaching applicants, the TDA also developed a wide range of routes to becoming a qualified teacher. From 2006, there were as many as 32 ways of acquiring Qualified Teacher Status.

Within three months of launching the recruitment campaign, the number of people calling the national teaching recruitment helpline tripled. Unfilled teacher vacancies soon halved to less than one percent in all subjects – and the number of new recruits teaching math also doubled. Recruitment to science subjects reached its target a year earlier, in 2002-03. "Science" includes biology, popular among new teachers, as well as the priority shortage subjects of physics and chemistry.

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The essence of professional work can be seen as the acknowledgement that it is the professional, and not the supervisor, who has the knowledge needed to make the important decisions as to what services are needed and how they are to be supplied. Organizations dominated by professionals are those in which there are fewer layers of management, workers are consulted on all matters of consequence, and workers have considerable discretion with respect to diagnosing client needs and deciding which services are appropriate to address those needs. Indeed, in many professions, and for many professionals, the worker is also the manager and, in many cases, the owner as well.

Teachers' jobs can be more rewarding when teachers are genuinely engaged in improvement.

Box 1.3. Teachers and schools take on responsibility for reform in Finland

Finland has made teaching a sought-after occupation by raising entry standards and giving teachers a high degree of responsibility, including roles as "action researchers" to find effective educational solutions.

Finland has raised the social status of its teachers to a level where there are few occupations with higher status. University professors are among the most highly regarded of all professionals, and even the word for teacher is the same for school teachers as for university professors. In 2010, over 6 600 applicants competed for 660 available slots in primary school preparation programs in the eight universities that educate teachers, making teaching one of the most sought-after professions.[14] As a result of this competitive climate, teaching is now a highly selective occupation in Finland, with highly skilled, well-trained teachers spread throughout the country.

While teachers in Finland have always enjoyed respect in society, a combination of raising the bar for entry and granting teachers greater autonomy over their classrooms and working conditions than their peers enjoy elsewhere has helped to raise the status of the profession. Finnish teachers have earned the trust of parents and the wider society by their demonstrated capacity to use professional discretion and judgment in the way they manage their classrooms and respond to the challenge of helping virtually all students become successful learners.

Since the 1980s, the Finnish system of accountability was redeveloped entirely from the bottom up. Teacher candidates are selected, in part, according to their capacity to convey their belief in the core mission of public education in Finland, which is deeply humanistic as well as civic and economic. The preparation they receive is designed to build a powerful sense of individual responsibility for the learning and well-being of all the students in their care. During their careers, they must combine the roles of researcher and practitioner. Finnish teachers are not only expected to become familiar with the knowledge base in education and human development, but are also required to write a research-based thesis as the final requirement for the Masters degree.

In education too, policy makers have often concluded that top-down initiatives alone were insufficient to achieve deep and lasting changes in practice because reforms focused on aspects that were too distant from the instructional core of teaching and learning; because reforms assumed that teachers would know how to do things they actually didn't know how to do; because too many conflicting reforms asked teachers to do too many things simultaneously; or because teachers and schools did not buy in to the reform strategy.

Over the past decade, many education systems have granted significantly more discretion to school heads and school faculties,[15] something that teachers often refer to as a factor contributing to the attractiveness of the teaching profession, and something that PISA shows to be closely related to school performance, when combined with appropriate accountability arrangements.[16] Finland (Box 1.3) and Ontario (Box 4.4) provide examples of how formerly centralized systems have shifted emphasis towards:

- improving the act of teaching;
- giving careful and detailed attention to implementation, along with opportunities for teachers to practice new ideas and learn from their colleagues;
- developing an integrated strategy and set of expectations for both teachers and students; and
- securing support from teachers and unions for the reforms.



In some countries, great discretion is given to the faculty, as a whole, and its individual members. In others, more discretion is given to schools that are doing well and less to those that might be struggling. In some countries, the school head is little more than the lead teacher; in others, the authorities continue to look to the school head to set the direction and manage the faculty.

Results from PISA suggest that an emphasis on professional responsibility at the frontline does not conflict with the establishment of centralized standards and assessments; rather, these go hand in hand.[17]

Recruitment measures can be adapted to bring in teachers from a wider range of backgrounds.

Countries are also trying to attract different types of people into teaching, not just to overcome shortages, but also to broaden the range of teachers' backgrounds and experiences. This includes promoting the benefits of a teaching career to groups who are often under-represented among teacher ranks, such as males and those from minority backgrounds.

The following are some examples of interesting techniques various countries use to do so:

- Opening the teaching profession to individuals with relevant experience outside education, not just in vocational programs (whose teachers are required to have industrial experience in some countries).
- Recognizing the skills and experience gained outside education and reflecting those in starting salaries.
- Enabling appropriately qualified entrants, including mature student teacher trainees, to start working and earning a salary before acquiring teacher education qualifications.
- Offering more flexible approaches to teacher education that create opportunities for part-time study and distance learning, and that give credits for relevant qualifications and experience. Such alternative pathways into teaching can be particularly appealing to under-represented groups, such as males and those from minority backgrounds.

Teachers are paid less than most college graduates, but selective incentives, flexibly applied, can use scarce resources to help attract teachers where needed.

Teachers' salaries increased in real terms between 1996 and 2008 in virtually all OECD countries, but tend to remain below those of other graduates (Figure 1.1 and Annex A). Statutory salaries for teachers with 15 years of experience are, on average, below 80% of full-time earnings for 25-64 year-olds with tertiary education, and 60% or below in the Czech Republic, Hungary, Iceland, Israel, Italy, Slovenia and the United States.[18] At the same time, other aspects of teachers' employment conditions, such as vacations, relative job security and pensions, are often more generous than in other occupations. OECD research suggests that where teachers' salaries are low relative to professions requiring similar qualifications, teacher supply appears to be quite price-elastic: for a given percentage increase in teachers' relative salaries, the supply of potential teachers increases by a greater percentage. In countries where teachers' salaries are already relatively high, teacher supply tends to be less elastic: a given percentage rise in salary produces a lower percentage increase in supply.[19]

Nevertheless, the large size of the teaching workforce means that to raise salaries across-the-board by even a few percentage points is very costly. Furthermore, the teacher labor market is diverse, and teacher recruitment difficulties vary by type of school, subject specialization, and region. Also, in many countries the problems of teacher shortages and high turnover of staff are felt most acutely in schools that are already disadvantaged. Some countries are therefore targeting larger salary increases to schools with particular needs or teacher groups in short supply (Chapter 3). For example, some targeted policy initiatives aim to attract teachers in subjects such as mathematics, science, technology, and vocational subjects.

Fee waivers, scholarships and forgivable loans are some of the financial incentives being proposed to attract such people into teacher education; and salary bonuses and recognition

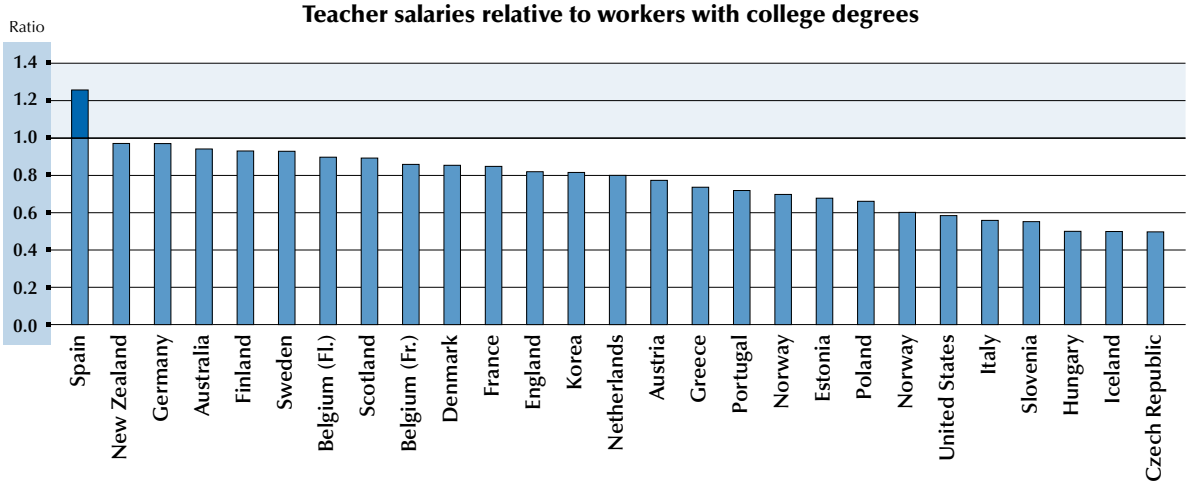
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of work experience are provided for those who already have the types of qualifications that are in short supply. Some countries offer substantial salary allowances for teaching in difficult areas, transportation assistance for teachers in remote areas, or bonuses for teachers with skills in short supply to help ensure that all schools are staffed with teachers of similar quality.

Also worthy of attention are non-salary strategies, such as less class contact time or smaller classes, for schools in difficult areas or that have particular educational needs.

Figure 1.1

Teacher salaries relative to workers with college degrees



Countries are ranked in descending order of the ratio of salary after 15 years of experience/minimum training to earnings for full-time full-year workers with tertiary education aged 25 to 64 (latest available year).
Source: OECD, *Education at a Glance 2010,* Table 3.1 (continued).

At the Summit, Norway reported on work with media to reduce the teacher bashing that had been prevalent in the media. Other countries such as China and Japan reported on public recognition days for teachers when respect for the profession is emphasized.[20]

As important as salaries is the professional public image of teachers.

All this said, policies to encourage more people to enter teaching are unlikely to pay off if high-quality candidates find it hard to gain teaching posts. The best candidates, who are likely to have good job prospects outside teaching, may not be willing to wait in a lengthy queue or endure a succession of short-term teaching assignments in difficult schools. Well-structured and well-resourced selection processes and programs of induction that ensure that the best candidates get the available jobs are therefore critical. Reducing the weight given to seniority in ranking applicants for teaching vacancies can also help reduce the risk that new teachers will be disproportionately assigned to difficult schools.

The best potential candidates need access to good teaching jobs.

ENSURING HIGH-QUALITY INITIAL TEACHER EDUCATION

Initial teacher education varies significantly across countries, and it is beyond the scope of this report to assess related policies and practices. However, OECD research has identified some principles that are worth noting:[21]

High-performing countries have found ways of educating teachers to become more effective and play an active role in reform.

- ***Education systems benefit from clear and concise profiles of what teachers are expected to know and be able to do in specific subject areas***. Such profiles can guide initial teacher education, teacher certification, teachers' on-going evaluation, professional development and career advancement, and also help assess the extent to which these different elements are effective. The profiles can reflect the school's learning objectives and profession-wide understanding of what counts as accomplished teaching (Box 3.2).



- Many countries have moved their initial teacher education programs towards a ***model based less on academic preparation and more on preparing professionals in school settings, with an appropriate balance between theory and practice.*** In these programs, teachers get into classrooms earlier, spend more time there and get more and better support in the process. This can include both extensive course work on how to teach – with a strong emphasis on using research based on state-of-the-art practice – and more than a year teaching in a designated school, associated with the university, during which time the teacher is expected to develop and pilot innovative practices and undertake research on learning and teaching.
- ***More flexible structures of initial teacher education can be effective in opening up new routes into the teaching career, without compromising the rigor of traditional routes***. The stages of initial teacher education, induction and professional development need to be interconnected to create a lifelong learning framework for teachers. In many countries, teacher education is not just providing sound basic training in subject-matter knowledge, pedagogy related to subjects, and general pedagogical knowledge; it also seeks to develop the skills for reflective practice and on-the-job research. Increasingly, initial teacher education tends to place more emphasis on developing the capacity of teachers in training to diagnose student problems swiftly and accurately and to draw from a wide repertoire of possible solutions those that are appropriate to the diagnosis. Some countries provide teachers with the research skills needed to enable them to improve their practice in systematic ways. For example, both in Finland (Box 1.3), Japan and the Shanghai province of China (Box 1.4), teachers are trained to be action researchers in practice, with the ability to work out ways of ensuring that any student starting to fall behind is helped effectively.

In addition, some countries have moved from a system in which teachers are recruited into a larger number of specialized colleges of teacher education, with relatively low entrance standards, to a system of a relatively smaller number of university-based teacher-education colleges with relatively high entrance standards and relatively high status in the university.

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Box 1.4. Preparing teachers to lead improvement

In Japan, all teachers participate in regular lesson studies in their schools.

The Japanese tradition of lesson study in which groups of teachers review their lessons and how to improve them, in part through analysis of student errors, provides one of the most effective mechanisms for teachers' self-reflection as well as being a tool for continuous improvement. Observers of Japanese elementary school classrooms have long noted the consistency and thoroughness with which a math concept is taught and the way in which the teacher leads a discussion of mathematical ideas, both correct and incorrect, so that students gain a firm grasp on the concept. This school-by-school lesson study often culminates in large public research lessons. For example, when a new subject is added to the national curriculum, groups of teachers and researchers review research and curriculum materials and refine their ideas in pilot classrooms over a year before holding a public research lesson, which can be viewed electronically by hundreds of teachers, researchers and policymakers.

The tradition of lesson study in Japan also means that Japanese teachers are not alone. They work together in a disciplined way to improve the quality of the lessons they teach. That means that teachers whose practice lags behind that of the leaders can see what good practice is. Because their colleagues know who the poor performers are and discuss them, the poor performers have both the incentive and the means to improve their performance. Since the structure of the East Asian teaching workforce includes opportunities to become a master teacher and move up a ladder of increasing prestige and responsibility, it also pays the good teacher to become even better.

In China, teachers are trained to be action researchers in effective practice, with the best teachers going on to support new teachers and helping to improve lesson quality.

The authorities in the Shanghai province of China emphasize giving prospective teachers the skills they will need for action research, and their method for improving their education system over time relies on research performed by teachers. As in Finland (Box 1.3), all students in Shanghai are expected to perform at high levels and teachers are expected to make sure that no student, literally, will be allowed to fall behind. This makes it essential that teachers identify students who are just beginning to flounder, diagnose the problem, and have the skills and knowledge needed to create a large and constantly updated reservoir of solutions to the student performance problems they have diagnosed.

During the course of their careers, teachers in Shanghai are involved in subject-based "teaching-study groups" to improve teaching at the grassroots level on a day-to-day basis. There are timetabled sessions when the study group meets, often with related personnel, such as laboratory assistants, to draw up very detailed lesson schemes for a particular topic the following week. The lesson plan serves not only as a guide for the teacher during the lesson, but also as documentation of the teacher's professional performance. During actual teaching, teachers may observe each other or may be observed by peers. For example, when a change in curriculum introduces a new teaching topic, teachers may be observed by new teachers, so these can learn from more experienced colleagues; by senior teachers, for mentoring purposes; or by the school principal, for monitoring or to provide constructive development assistance. Sometimes, teachers are expected to teach demonstration lessons, called public lessons, for a large number of other teachers to observe and comment upon.

This structured organization of teaching in Shanghai is not only a means for administration; it is also a major platform for professional enhancement. Teachers in Shanghai are classified into four grades that indicate their professional status. Promotion from one grade to the next often requires the capacity to give demonstration lessons, contribute to the induction of new teachers, publish in journals or magazines about education or teaching, and so forth. The provincial office often identifies the best of the teachers who emerge from evaluation processes and relieves them of some or all of their teaching duties so that they can give lectures to their peers, make demonstrations, and coach other teachers on a district, provincial and even national level. Carefully picked schools are often asked to pilot new programs or policies before they are scaled-up, and the best teachers in those schools are enlisted as co-researchers to evaluate the effectiveness of the new practices.



Chapter 2

TEACHER DEVELOPMENT, SUPPORT, EMPLOYMENT CONDITIONS AND CAREERS

Education is still far from being a knowledge industry, in the sense that its own practices are being continuously transformed by greater understanding of their efficacy. While in many other fields, people enter their professional lives expecting that what they do and how they do it will be transformed by evidence and research, this is still not generally the case in education. Transforming teaching does not just involve high quality recruiting and initial education; it also requires that those who are now teaching adapt to constantly changing demands. In some countries, this is also a massive quantitative challenge: China alone has 12 million teachers, many of whom are in rural areas and in need of significant upgrading of their skills to cope with rapidly changing demands on schools.

Effective development of teachers in service demands both more and different forms of professional development as well as appropriate career structure and career diversity. Too often, courses are isolated events that are not joined up with changes in schools. More effective forms of development tend to be welcomed by teachers themselves, who are often willing to contribute to the cost of such education in money and time. Effective individual professional development sits alongside collective learning, with teachers exchanging ideas and collaborating to improve classroom practice; but this remains all too rare. The existing teaching force can be supported through flexible approaches to career development and employment conditions. While jobs for life are becoming increasingly rare, having opportunities to work part-time and to develop careers in new ways can help to improve the attractiveness of the profession.



Improvements must come partly through the transformation of the present teaching force, with teachers expected to be able to adapt to new knowledge and demands during their careers.

As important as the recruitment and selection of promising graduates is, it can only be one of several components of human resource management in education. The frequently cited claim that the best-performing education systems all recruit their teachers from the top-third of graduates - however that is defined - is not supported by evidence. Successful reform cannot wait for a new generation of teachers; it requires investment in the present teacher workforce, providing quality professional development, adequate career structures and diversification, and enlisting the commitment of teachers to reform (Boxes 4.1 to 4.6).

The Summit concluded that making teaching an attractive and effective profession requires supporting continuous learning, developing career structures to give new roles to teachers, and engaging strong teachers as active agents in school reform, not just implementers of plans designed by others. It also requires strengthening the knowledge base of education and developing a culture of research and reflection in schools so that teaching and learning can be based on the best available knowledge.[22]

The ILO/UNESCO Committee of Experts on the Application of the Recommendations concerning Teaching Personnel notes in its 2009 report that "Teaching career structures… are evolving to encourage better teaching practices and incentives for teachers to remain in teaching, but much more needs to be done to link teacher education and professional development, evaluation and career progression. Evidence from international surveys point to a general lack of professional development support adapted to the needs of teachers and learners."[23]

The following analysis looks at how the individual development of teachers can be improved and how greater collaboration among teachers can improve the quality of teaching.

MEETING THE NEED FOR PROFESSIONAL DEVELOPMENT

The requirements of teachers change continuously, so pre-service education is not enough, and...

In many countries, the role and functioning of schools are changing – and so is what is expected of teachers. They are asked to teach in increasingly multicultural classrooms. They must place greater emphasis on integrating students with special learning needs, both special difficulties and special talents, in their classes. They need to make more effective use of information and communication technologies for teaching. They are required to engage more in planning within evaluative and accountability frameworks. And they are asked to do more to involve parents in schools. No matter how good the pre-service education for teachers is, it cannot be expected to prepare teachers for all the challenges they will face throughout their careers.

... continuous professional development is needed to update skills and knowledge in a range of ways.

The development of teachers beyond their initial education can serve a range of purposes, including:

- updating individuals' knowledge of a subject in light of recent advances in the area;
- updating individuals' skills and approaches in light of the development of new teaching techniques and objectives, new circumstances, and new educational research;
- enabling individuals to apply changes made to curricula or other aspects of teaching practice;
- enabling schools to develop and apply new strategies concerning the curriculum and other aspects of teaching practice;
- exchanging information and expertise among teachers and others, *e.g.* academics and industrialists; or
- helping weaker teachers become more effective.

Several aspects have shown to be central to successful professional development.

In seeking to meet teachers' professional development requirements, policy makers and practitioners need to consider both how to support and encourage participation and how to ensure that opportunities match teachers' needs. This needs to be balanced with the

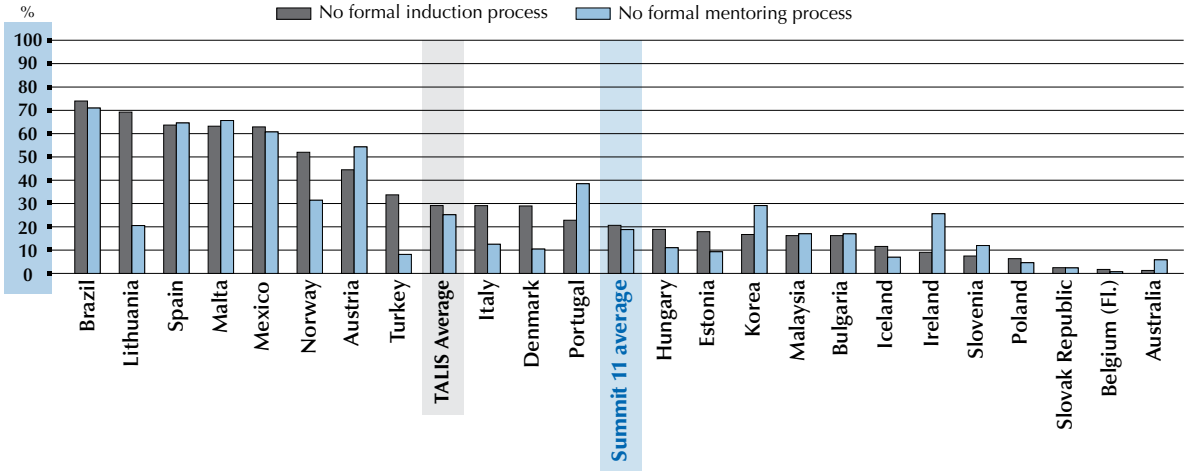
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cost in terms of both finance and teachers' time. OECD research identifies several aspects as central to successfully bridging the gap between the ideal learning environment and day-to-day practice:[24]

- Well-structured and well-resourced induction programs can support new teachers in their transition to full teaching responsibilities before they obtain all the rights and responsibilities of full-time professional teachers. In some countries, once teachers have completed their pre-service education and begun their teaching, they begin one or two years of heavily supervised teaching. During this period, the beginning teacher typically receives a reduced workload, mentoring by master teachers, and continued formal instruction (Figure 2.1).
- Effective professional development needs to be on-going, include training, practice and feedback, and provide adequate time and follow-up support. Successful programs involve teachers in learning activities that are similar to those they will use with their students, and encourage the development of teachers' learning communities.
- Teacher development needs to be linked with wider goals of school and system development, and with appraisal and feedback practices and school evaluation.
- There is often a need to re-examine structures and practices that inhibit inter-disciplinary practice and to give more room for teachers to take time to learn deeply, and employ both inquiry and group-based approaches, especially in the core areas of curriculum and assessment.

Figure 2.1

Percentage of teachers without mentoring and induction



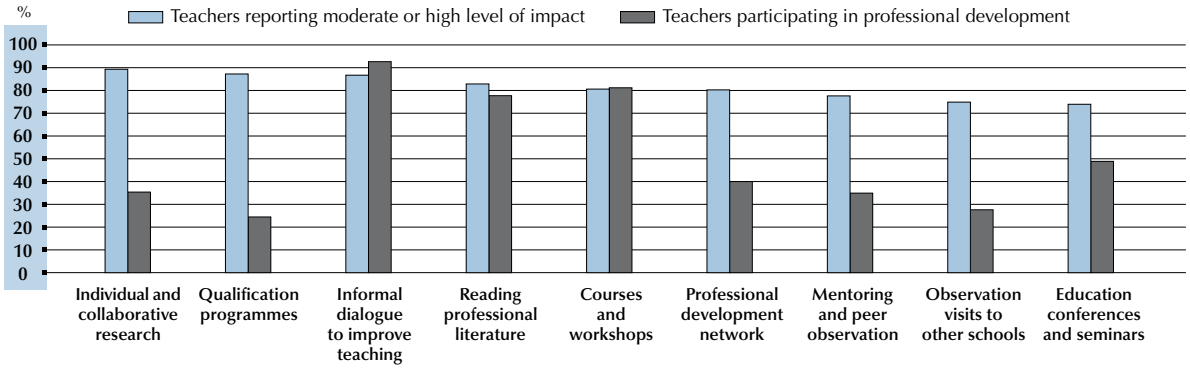
Note: "Summit 11" represents the average figure for the countries that were represented in the International Summit on the Teaching Profession.
Countries are ranked in descending order of the percentage of teachers in schools that do not have a formal induction programme.
Source: OECD (2009), *Creating Effective Teaching and Learning Environments: First Results from TALIS,* Table 3.6.

In some countries, ongoing professional development already plays an important role. In the Chinese province of Shanghai, each teacher is expected to engage in 240 hours of professional development within five years. Singapore provides teachers with an entitlement of 100 hours of professional development per year to keep up with the rapid changes occurring in the world and to be able to improve their practice. More generally, results from the Teaching and Learning International Survey (TALIS) show that across countries almost 90% of teachers participated in some form of professional development over an 18-month period and, on average, spent just under one day per month in professional development[25] (Figures 2.2 and 2.3).

The extent of in-service teacher education varies greatly across and within countries...

Figure 2.2

Comparison of impact and participation by types of development activity



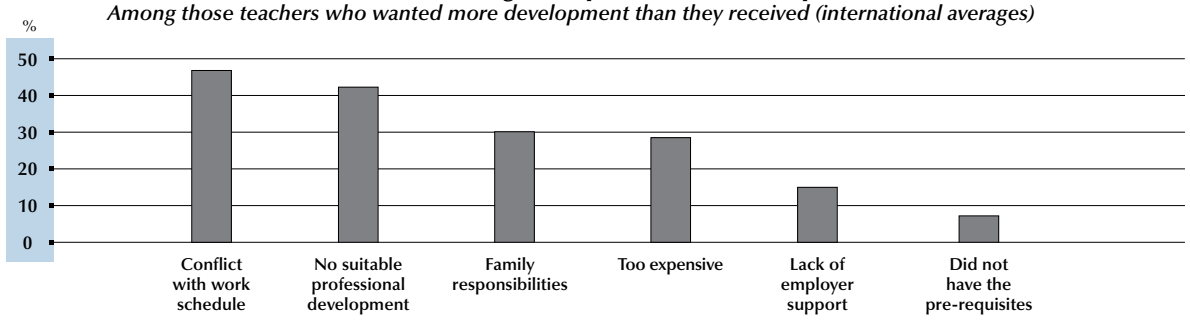
Activities are ranked in descending order of the percentage of teachers reporting a moderate or high impact of the professional development they took.

Source: OECD (2009), *Creating Effective Teaching and Learning Environments: First Results from TALIS,* Tables 3.2 and 3.8.

Figure 2.3

Reasons for not taking more professional development

Among those teachers who wanted more development than they received (international averages)



Reasons are ranked in descending order of frequency with which the barrier was reported by teachers.

Source: OECD (2009), *Creating Effective Teaching and Learning Environments: First Results from TALIS,* Table 3.7.

However, there is considerable variation in the incidence and intensity of teacher participation in professional development both across and within countries;[26] and older teachers tend to engage in less professional development than younger ones. The types of development undertaken by teachers explain some of these variations. Countries in which a high percentage of teachers take part in "qualification programs" or "individual and collaborative research" tend to have a higher average number of days of development but only a small minority of teachers tend to participate in these activities.

Teachers consider better and more targeted professional development as an important lever towards improvement. TALIS data show that teachers' participation in professional development goes hand-in-hand with their mastery of a wider array of methods to use in the classroom, even if it is not clear to what extent professional development triggers or responds to the adoption of new techniques. TALIS data also identify close associations between professional development and a positive school climate, teaching beliefs, co-operation between teachers and teacher job satisfaction.

...but mostly still takes the form of one-off events rather than upgrading qualifications or collaborative research, which, teachers report, have the greatest impact.

However, schools and systems need to better match the costs and benefits of, and supply and demand for, professional development. Results from TALIS show that, across countries, relatively few teachers participate in the kinds of professional development that they believe has the largest impact on their work, namely qualification programs and individual and collaborative research, even if those who do commit considerable time and money to these courses consider them effective (Figure 2.2 and Annex A).

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Box 2.1. Innovative teacher-preparation programs in the United States

Boston's Teacher Residency is preparing high-flying graduates to fill shortages in the city's schools.

The Boston Teacher Residency (BTR), established in 2003, is a teacher-preparation program that recruits high-performing college graduates and professionals and prepares them to teach in Boston schools. The program focuses on mastering the skills that teachers will need to be effective in the public schools in which teachers will work, emphasizing clinical training and pairing residents with experienced classroom teachers. Residents begin the program with a two-month summer institute, and then spend their first year in a classroom four days a week, spending the fifth day attending courses and seminars. This approach allows residents to master simultaneously both the theory and practice of teaching. After their first year, residents receive an initial teacher license and a master's degree in education, and continue to receive support from BTR in the form of induction coaching, courses and seminars, and placement in collaborative clusters within schools. A study of the program's impact on student achievement is underway, but early indicators of success include a rigorous recruitment and selection process in which only 13% of applicants are admitted, three-year retention rates of 85% (far above the U.S. average for urban schools), growth of the program's outputs to fill 60% of Boston's annual need for math and science teachers, and highly favorable reviews from school principals, with 96% of principals saying they would recommend hiring a BTR graduate to another principal. BTR recently received a USD 5 million "development" grant under the U.S. Department of Education's Investing in Innovation Fund, which seeks to identify and scale-up promising and proven practices in teacher education and other priority areas.

Statewide programs in Colorado, Missouri, New Jersey and Vermont

A recent study highlighted four states within the U.S. that actively support teacher professional learning and growth, whose students exhibit strong academic achievement on the National Assessment of Educational Progress (NAEP), and whose teachers report a high level of participation in professional development. The four states described in the study are characterized by: (1) The adoption of standards or guidelines for teacher professional development; (2) the requirement of induction and mentoring programs for beginning teachers; (3) a state-level organization or professional board that oversees teacher licensing, professional teaching standards and professional development; and (4) the provision of a range of support and incentives for professional learning and growth.[27]

Highlights of the states' practices and policies are described below:

Colorado: All districts in Colorado are required to provide a state-approved induction program for beginning teachers, and teachers must complete the induction program before they are eligible for the next level of licensure. The state also conducts a biennial teaching conditions survey that collects data on the quality of teachers' professional development opportunities. The survey asks new teachers about a range of induction support: orientation meetings, access to Professional Learning Communities (PLCs), release time to observe other teachers, time to meet with one's mentor during school hours, and a reduced workload. In addition, all teachers must complete 90 hours of professional development every five years for licensure renewal and the state provides guidelines for this professional development, including the guideline that learning activities must be within a teachers' endorsement area(s). The state supports several state-level or statewide initiatives that offer professional development as one component of their programs. For example, the state has a "Closing the Achievement Gap" initiative which awards grants to a limited number of districts for improving student achievement; a portion of these funds can be used to help teachers improve instructional practices.

Missouri: Missouri's Outstanding Schools Act requires districts to allocate one percent of state funding to local professional development efforts and an additional one percent of the state's overall budget is dedicated to a statewide network of professional development centers (Regional Professional Development Centers or "RPDCs"). These RPDCs are overseen by the Missouri Department of Education and they provide a common vision for professional development. (Funding for the centers was withheld in the challenging budget year of 2010, but nine of the 11 centers have found alternative funding sources so their work is continuing.) Through statute, the state also requires school-based "Professional Development Committees" (or PDCs), composed of teachers, to make decisions on how earmarked professional development funds should be spent.

...



New Jersey: New Jersey has a statewide Professional Teaching Standards Board which is comprised of teachers and other stakeholders and has created structures and standards for reflective and collaborative professional development work. The state requires mentoring for new teachers, data-driven professional development plans for individual teachers, and school-level committees that create school-level professional development plans. The state supports 33 Professional Learning Community (PLC) Lab Schools and assesses the degree to which the state's professional development standards are reflected in school practice.

Vermont: Vermont has guidelines for the professional development required for teachers' licensure renewal. In order to apply for licensure renewal, teachers are required to present a portfolio of their work, their past professional development and their planned, future learning activities to the regional professional standards board. Through state-supported Educational Services Agencies and intermediary organizations, the state is attempting to coordinate statewide professional development and enable districts to pool their resources and share knowledge. Coaches from one organization – Vermont's School Reform Initiative (SRI) chapter – work closely with staff in individual schools to help them strengthen their collaborative skills, learn how to give and receive feedback on their work, and build the capacity of teacher leaders. Vermont also has many homegrown educational programs that have arisen from a combination of university partnerships, federal grants and "symbiotic relationships with state initiatives". One example is the Vermont Math Initiative (VMI) which used state grant monies to help start a three-year master's program which provides comprehensive mathematics training for K–8 teachers.

Conversely, the types of activities that teachers consider less effective, namely one-off education conferences and seminars, show comparatively high participation rates. This being said, research on how the incidence and intensity of different types of professional development activities influences learning outcomes is still limited.

Teacher demand for professional development is often not met, sometimes for lack of time, sometimes for lack of opportunity...

Despite high levels of participation in development activities, the professional development needs of a significant proportion of teachers are often not fully met. The TALIS survey found that:

- Fifty five percent of the teachers surveyed reported that they wanted more professional development than they received during the 18-month survey period. The extent of unsatisfied demand is sizeable in every country, ranging from 31% to over 80%.
- Across countries, teachers who were more likely to report unsatisfied demand were in public schools, females and under 40 years of age.
- Across countries, the aspects of teachers' work with greatest development need are "teaching special-needs students", followed by "information and communication technology teaching skills" and "student discipline and behavior".

What prevents teachers from undertaking as much professional development as they would like? The most common reason, cited by nearly half of teachers in TALIS, was conflict with their work schedule (Figure 2.3 and Annex A). However, almost as many cited the lack of suitable opportunities for professional development, and these teachers also generally engaged in less development activity.

...and these shortfalls are likely to undermine the capacity of education systems to adapt to changing needs, especially in certain areas, like adopting ICT and serving students of varied backgrounds.

But it is not just a question of producing more of the same professional development. Teachers consistently reported that their greatest need for professional development was in learning how to handle differences in student learning styles and backgrounds, using information and communication technologies effectively, and improving student behavior (Figure 2.4). These responses offer some direction on where future efforts should focus, and suggest that a sound assessment of provision and support of development is important.

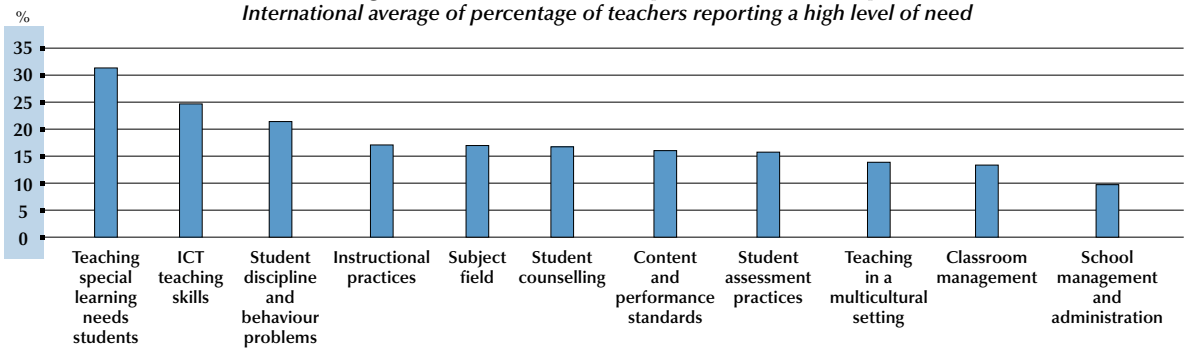
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Figure 2.4

Areas of greatest need for teacher professional development

International average of percentage of teachers reporting a high level of need



Areas are ranked in descending order of the international average where teachers report a high level of need for development.

Source: OECD (2009), *Creating Effective Teaching and Learning Environments: First Results from TALIS,* Table 3.4.

Of course, a certain level of unsatisfied demand is to be expected; it is only natural that a certain proportion of teachers will, at some time, not feel fully equipped to carry out their work effectively. Nonetheless, the extent of unsatisfied demand appears large, and in some countries the great majority of teachers report that they need more professional development than they receive. The extent to which this undermines the effectiveness of these teachers is difficult to assess; but it is equally difficult to imagine that such deficits are not to some extent detrimental to effective teaching and learning. The cost of providing additional professional development needs to be seen in relation to the cost of not providing it, in terms of lost opportunities for students to learn.

Most professional development is provided free; but in some countries teachers who contribute financially tend to participate in and benefit more from these activities.

Even if there is no country in which the professional development of teachers is completely free, TALIS data indicate that teachers in most countries feel that the level of support they receive, in terms of finance and separately scheduled time in which to undertake development activities, is significant. In the participating countries, an average of around two-thirds of teachers pay nothing for these activities, and a similar proportion receive allocated time. Schools and public authorities clearly make a significant investment in teachers' professional development (Figure 2.5 and Annex A).

The fact that a sizeable proportion of teachers underwrite the cost of their professional development is evidence that many teachers are contributing their share of the cost of advancing their career if they cannot find free programs of adequate quality. In fact, the data show that where teachers paid for their own professional development, they tended to participate in more of it: those who paid the full cost took over twice as many teacher-education courses as those who received them for free. This partly reflects the fact that courses that are paid for tend to lead to professional qualifications and are more time-consuming. This suggests that free provision is not necessarily the only way of stimulating participation, at least when teachers are seeking to further their careers and their earnings prospects, such as when they prepare for becoming head teachers, inspectors or teachers at a superior educational level.

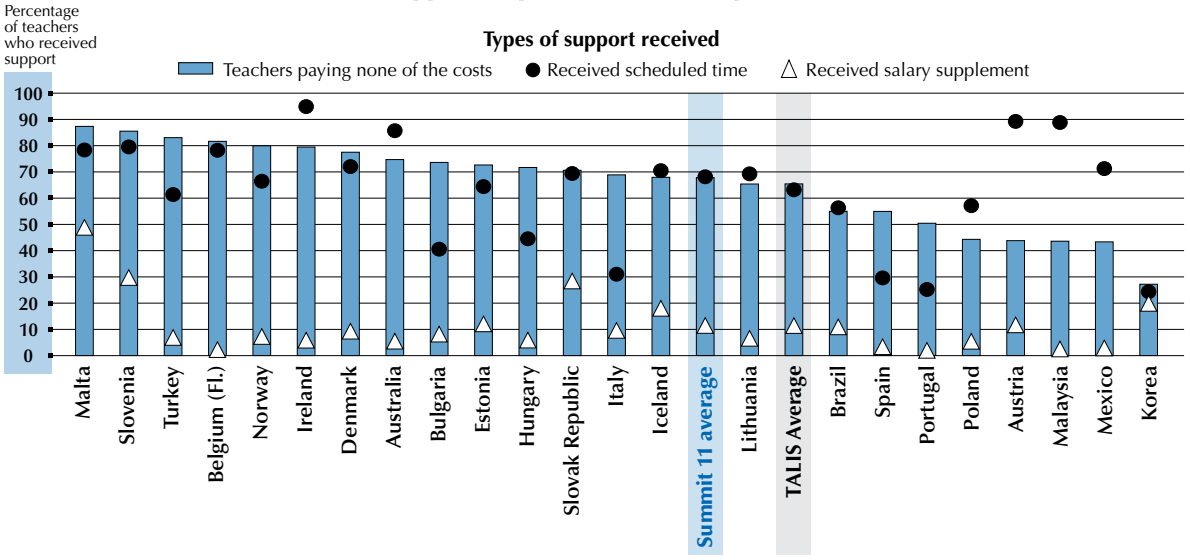
FOSTERING AN ENVIRONMENT FOR EFFECTIVE TEACHER COLLABORATION

Teachers work together relatively rarely; but when they do, they tend also to work well with students.

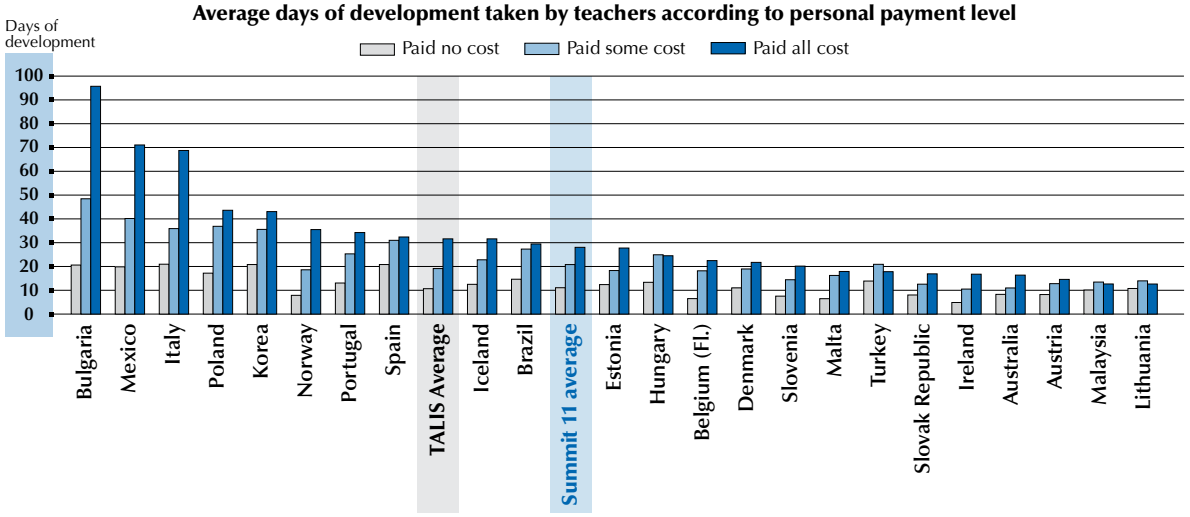
Teachers can do more, and should be encouraged to do more, to share their expertise and experience systematically in ways that go beyond the mere exchange of information. Teachers report relatively infrequent collaboration with colleagues within the school, beyond a mere exchange of information and ideas; direct professional collaboration to enhance student learning is rarer.[28] Understanding that collaboration takes time, some countries are providing teachers with some scheduled time or salary supplement to encourage them to engage in such co-operation.

Figure 2.5

Support for professional development



Note: ''Summit 11'' represents the average figure for the countries that were represented in the International Summit on the Teaching Profession.
Countries are ranked in descending order of percentage of teachers having paid none of the cost of professional development.
Source: OECD (2009), *Creating Effective Teaching and Learning Environments: First Results from TALIS,* Table 3.5.



Note: ''Summit 11'' represents the average figure for the countries that were represented in the International Summit on the Teaching Profession.
Countries are ranked in descending order of percentage of teachers having paid all of the cost of development they took.
Source: OECD (2009), *Creating Effective Teaching and Learning Environments: First Results from TALIS,* Table 3.5a, available on line.

Teachers who exchange ideas and information and co-ordinate their practices with other teachers also report more positive teacher-student relations at their school. Thus, it may be reasonable to encourage teachers' co-operation in conjunction with improving teacher-student relations, as these are two sides of a positive school culture. Positive teacher-student relations are not only a significant predictor of student achievement, they are also closely related to individual teachers' job satisfaction (Figure 2.6). This finding emphasizes the role of teachers' positive evaluations of the school environment for effective education and teacher well-being. Efforts to improve school climate are particularly important in larger public schools attended by students with low average ability. Several of the East Asian countries provide interesting models for building on professional teacher collaboration to make the most of their top-performing teachers (Boxes 1.4 and 1.5).

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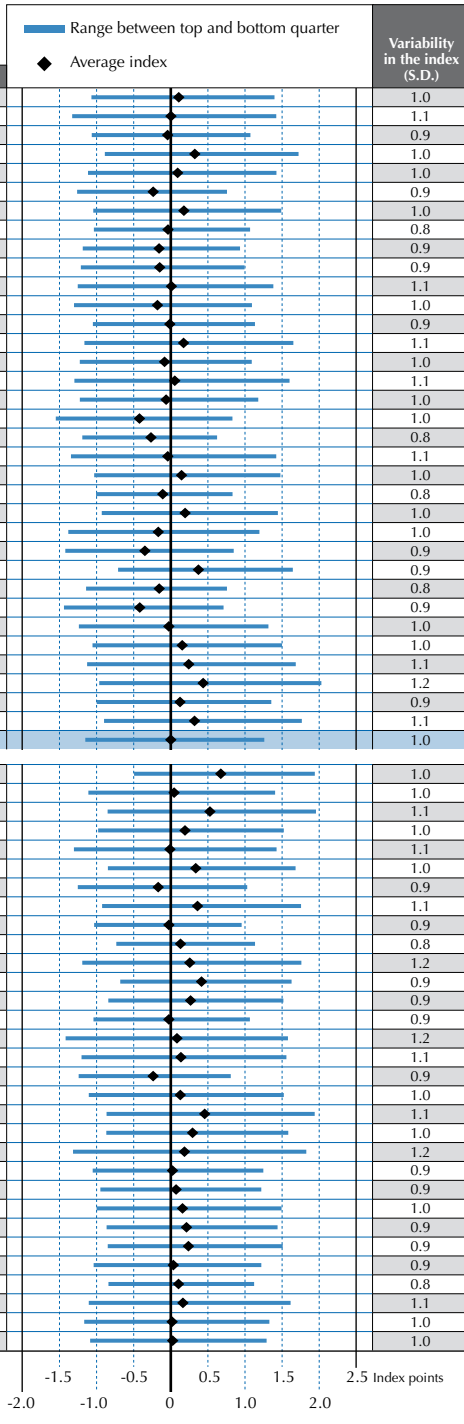
Figure 2.6

Students' views of teacher-student relations

Index of teacher-student relations based on the reports of 15-year-old students

A	I get along well with most of my teachers.
B	Most of my teachers are interested in my well-being.
C	Most of my teachers really listen to what I have to say.
D	If I need extra help, I will receive it from my teachers.
E	Most of my teachers treat me fairly.

		Percentage of students agreeing or strongly agreeing with the following statements					Variability in the index (S.D.)	School variability in the distribution of the index (Proportion of the index variance between schools)
		A	B	C	D	E		
OECD	Australia	85	78	71	84	85	1.0	0.04
OECD	Austria	87	59	61	67	77	1.1	0.07
OECD	Belgium	83	63	67	84	86	0.9	0.04
OECD	Canada	89	80	74	89	88	1.0	0.07
OECD	Chile	85	74	72	77	71	1.0	0.06
OECD	Czech Republic	80	67	57	78	72	0.9	0.06
OECD	Denmark	89	79	71	79	85	1.0	0.06
OECD	Estonia	86	76	60	85	75	0.8	0.04
OECD	Finland	87	49	63	84	80	0.9	0.03
OECD	France	78	53	62	80	88	0.9	0.05
OECD	Germany	85	58	69	71	77	1.1	0.05
OECD	Greece	87	66	62	63	65	1.0	0.06
OECD	Hungary	86	68	79	77	74	0.9	0.05
OECD	Iceland	88	73	74	82	80	1.1	0.09
OECD	Ireland	82	76	63	77	81	1.0	0.03
OECD	Israel	83	61	68	70	80	1.1	0.10
OECD	Italy	82	72	62	77	79	1.0	0.08
OECD	Japan	73	28	63	64	74	1.0	0.05
OECD	Korea	79	60	57	83	75	0.8	0.06
OECD	Luxembourg	82	59	63	72	78	1.1	0.04
OECD	Mexico	86	77	77	78	75	1.0	0.05
OECD	Netherlands	87	61	66	85	85	0.8	0.02
OECD	New Zealand	88	77	73	87	86	1.0	0.04
OECD	Norway	84	57	55	74	74	1.0	0.06
OECD	Poland	81	35	60	73	71	0.9	0.04
OECD	Portugal	94	89	82	90	82	0.9	0.03
OECD	Slovak Republic	85	71	66	79	75	0.8	0.08
OECD	Slovenia	80	30	56	74	74	0.9	0.08
OECD	Spain	82	70	67	68	79	1.0	0.09
OECD	Sweden	89	75	71	82	82	1.0	0.07
OECD	Switzerland	85	69	70	82	83	1.1	0.07
OECD	Turkey	86	88	78	87	69	1.2	0.04
OECD	United Kingdom	86	78	69	88	83	0.9	0.04
OECD	United States	90	81	74	88	89	1.1	0.08
OECD	**OECD average**	85	66	67	79	79	1.0	0.06
Partners	Albania	89	86	89	92	94	1.0	0.06
Partners	Argentina	83	75	73	68	80	1.0	0.08
Partners	Azerbaijan	90	77	86	91	89	1.1	0.06
Partners	Brazil	86	81	74	78	83	1.0	0.05
Partners	Bulgaria	85	53	71	80	73	1.1	0.07
Partners	Colombia	86	82	75	79	91	1.0	0.06
Partners	Croatia	87	65	60	69	70	0.9	0.05
Partners	Dubai (UAE)	89	83	75	87	79	1.1	0.04
Partners	Hong Kong-China	89	71	67	89	82	0.9	0.03
Partners	Indonesia	93	82	63	85	91	0.8	0.04
Partners	Jordan	83	81	77	80	71	1.2	0.04
Partners	Kazakhstan	93	83	80	93	89	0.9	0.14
Partners	Kyrgyzstan	90	69	75	89	87	0.9	0.06
Partners	Latvia	86	65	69	85	82	0.9	0.06
Partners	Liechtenstein	82	66	66	78	75	1.2	0.11
Partners	Lithuania	85	56	66	78	80	1.1	0.06
Partners	Macao-China	83	64	53	78	71	0.9	0.03
Partners	Montenegro	89	69	75	76	79	1.0	0.10
Partners	Panama	90	83	77	79	89	1.1	0.04
Partners	Peru	88	81	82	85	83	1.0	0.08
Partners	Qatar	78	77	71	80	74	1.2	0.05
Partners	Romania	89	62	77	74	84	0.9	0.04
Partners	Russian Federation	88	76	73	82	80	0.9	0.07
Partners	Serbia	89	86	69	72	80	1.0	0.03
Partners	Shanghai-China	89	81	79	90	85	0.9	0.03
Partners	Singapore	91	81	74	88	87	0.9	0.04
Partners	Chinese Taipei	88	72	64	89	83	0.9	0.03
Partners	Thailand	87	77	82	83	87	0.8	0.14
Partners	Trinidad and Tobago	84	80	67	82	78	1.1	0.03
Partners	Tunisia	83	51	72	77	81	1.0	0.06
Partners	Uruguay	88	71	81	67	73	1.0	0.04



Note: Higher values on the index indicate positive teacher-student relations.
Source: OECD, *PISA 2009 Database*, Table IV.4.1.



ESTABLISHING EFFECTIVE EMPLOYMENT CONDITIONS

Finding alternatives to guaranteeing teachers a job for life has not been easy...

The predominant model for teacher employment in OECD countries is "career-based" public service in which entry is competitive, career development is extensively regulated and lifetime employment is largely guaranteed.[29] In a situation where teachers are not commonly removed for unsatisfactory performance, the quality of teachers depends mainly on setting high standards of entering teacher-preparation programs, on the quality of their initial preparation, and on the attention given to the quality of their preparation following their initial induction. Under career-based systems, the risk is that the quality of the teaching force depends excessively on getting initial recruitment and teacher education right, and that any improvement over time will take many years to affect most serving teachers. Moreover, career advancement can become heavily dependent on adhering to organizational norms, which helps to ensure uniformity and predictability of service and a strong group ethos, but can make systems inflexible to change and ill-equipped to serve diverse needs in different settings.

...and experience in OECD countries is that it is not easy to graft features from a markedly different system onto a well-established employment model.

In some countries, public servants are required to apply for specific positions by showing that their competencies match specific job requirements, rather than having a guaranteed career. However, this can increase recruitment and management costs, and make it harder to develop shared values and provide consistent service. Another approach has been to introduce more contract or temporary employment positions in parallel with career-based systems. This opens up possibilities for external recruitment, gives local managers more scope for personnel decisions, and institutes management by objectives. However, the general experience in OECD countries is that it is not easy to graft features from a markedly different system onto a well-established employment model. Those in career-based systems who have met demanding entrance criteria and accepted relatively low starting salaries can feel threatened by a less predictable future. Those accustomed to professional status and autonomy derived from their specialist skills may feel threatened by moves to institute system-wide standards. The OECD's *Teachers Matter* study, PISA and the annual data collection *Education at a Glance* identify a number of trends in country reforms that are highlighted in this chapter.

In many successful systems, schools have become more involved in personnel management.

Successful enterprises often report that personnel selection is the most important set of decisions that they make. In the case of teaching, the evidence suggests that all too often the selection process follows rules about qualifications and seniority that bear little relationship to the qualities needed to be an effective teacher. The sheer size of school systems in many countries means that the process of teacher selection is often highly impersonal, and it is hard for teachers to build a sense of commitment to the schools where they are appointed – or for the schools to build a sense of commitment to them. Data from PISA suggest that many of the high-performing education systems have responded by giving schools more responsibility – and accountability – for teacher selection, working conditions, and development (Figure 2.7 and Annex A).

The OECD's *Teachers Matter* study describes how school leaders in many of the best-performing education systems actively seek out and develop the best possible teachers and, with personal interviews and visits to schools by candidates, seek to optimize the match between applicants and school needs. The study suggests that such approaches work best where parallel steps are taken to ensure that accountability, efficiency and equity are not jeopardized, for example by developing school leaders' skills in personnel management, providing disadvantaged schools with greater resources with which to recruit effective teachers, making information more accessible in the teacher labor market, and monitoring the outcomes of a more decentralized approach and adjusting accordingly. However, successful decentralization of personnel management, and school decision-making more generally, require that central and regional authorities help to ensure an adequate and equitable distribution of teacher resources throughout the country. It is also important to have independent appeals procedures to ensure fairness and protect teachers' rights.

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Figure 2.7 (1/2)

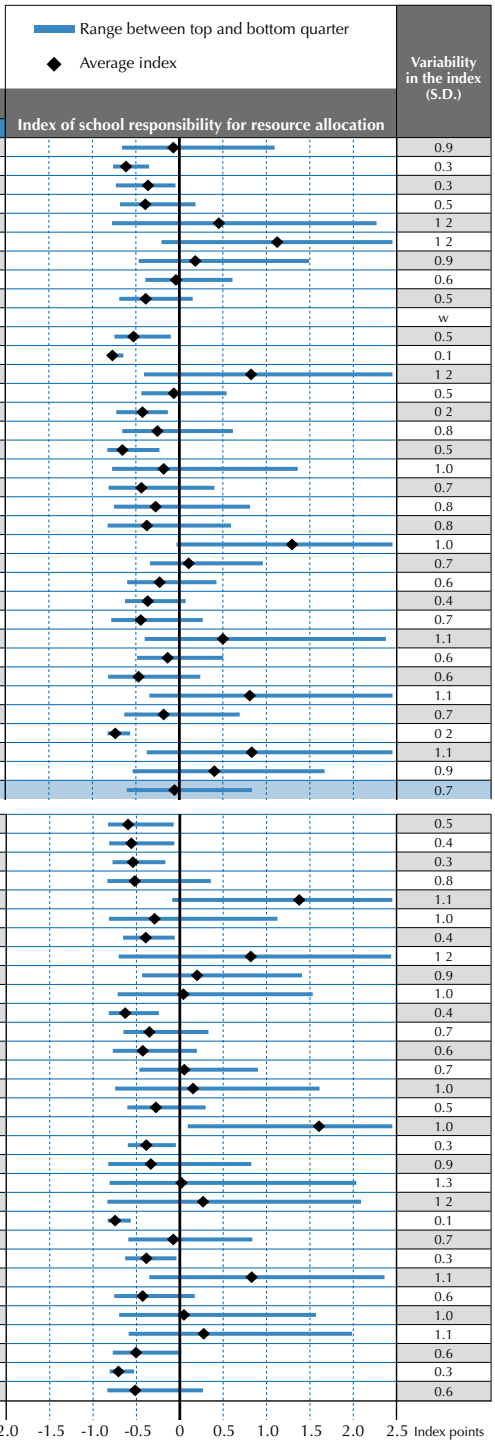
How much autonomy individual schools have over resource allocation

Percentage of students in schools of 15-year-olds whose principals reported that only "principals and/or teachers", only "regional and/or national education authority" or both "principals and/or teachers" and "regional and/or national education authority" have a considerable responsibility for the following tasks

A Selecting teachers for hire
B Dismissing teachers
C Establishing teachers' starting salaries
D Determining teachers' salaries increases
E Formulating the school budget
F Deciding on budget allocations within the school

1 Only "principals and/or teachers"
2 Both "principals and/or teachers" and "regional and/or national education authority"
3 Only "regional and/or national education authority"

		A			B			C			D			E			F			Index of school responsibility for resource allocation	Variability in the index (S.D.)
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3		
OECD	Australia	61	20	19	43	12	45	12	5	84	13	6	81	68	16	16	93	6	0		0.9
	Austria	13	35	52	5	26	68	1	0	99	1	0	99	11	9	80	84	12	4		0.3
	Belgium	75	13	12	63	21	17	0	1	99	0	1	99	56	18	26	63	19	17		0.3
	Canada	54	39	7	17	35	48	3	5	92	4	6	91	25	30	45	76	19	5		0.5
	Chile	69	8	23	59	3	38	37	1	62	37	1	62	55	9	36	71	9	20		1 2
	Czech Republic	100	0	0	99	1	0	77	15	8	65	25	11	55	36	9	75	24	1		1 2
	Denmark	97	2	0	69	15	16	20	10	70	16	14	70	80	13	8	98	2	0		0.9
	Estonia	98	2	0	95	5	0	7	20	73	12	33	55	37	54	9	85	15	1		0.6
	Finland	32	43	25	18	19	63	8	7	84	5	15	80	36	41	23	92	6	1		0.5
	France	w	w	w	w	w	w	w	w	w	w	w	w	w	w	w	w	w	w		w
	Germany	29	36	34	7	14	79	3	0	97	4	15	81	29	4	67	97	2	2		0.5
	Greece	0	1	99	0	2	98	0	0	100	0	0	100	34	7	59	59	7	34		0.1
	Hungary	99	1	0	97	2	1	49	7	44	56	7	37	73	15	12	92	5	2		1 2
	Iceland	94	6	0	93	7	0	7	13	80	4	16	80	57	30	13	77	22	0		0.5
	Ireland	61	25	14	36	14	50	0	2	98	1	0	99	60	13	27	89	5	6		0 2
	Israel	67	30	3	49	38	13	9	4	87	13	6	80	15	26	59	66	24	11		0.8
	Italy	9	10	82	9	6	84	3	0	97	3	0	96	7	7	86	69	11	21		0.5
	Japan	25	2	73	22	1	77	13	0	87	16	3	80	28	4	69	89	3	8		1.0
	Korea	32	6	62	23	4	74	8	0	92	6	0	94	29	12	58	86	6	8		0.7
	Luxembourg	21	41	38	19	36	45	6	0	94	6	0	94	31	57	12	78	14	8		0.8
	Mexico	34	5	61	22	4	73	8	0	92	6	0	94	46	6	48	71	7	22		0.8
	Netherlands	100	0	0	99	1	0	72	8	20	55	12	33	99	1	0	100	0	0		1.0
	New Zealand	100	0	0	89	7	4	9	3	88	15	21	64	95	4	1	99	1	0		0.7
	Norway	72	21	6	44	22	34	8	4	88	6	13	81	55	28	17	88	12	1		0.6
	Poland	87	12	1	90	10	0	9	20	71	4	20	77	7	42	51	26	43	31		0.4
	Portugal	13	57	30	14	0	86	5	0	94	5	0	94	63	10	27	89	3	8		0.7
	Slovak Republic	98	2	0	98	2	0	39	27	34	32	33	35	45	40	15	70	27	3		1.1
	Slovenia	96	4	1	88	10	1	7	11	82	13	31	56	26	49	26	78	21	1		0.6
	Spain	31	3	66	32	1	67	3	2	95	3	2	95	63	4	33	93	4	3		0.6
	Sweden	96	4	0	63	17	20	57	16	27	69	22	9	64	20	16	93	5	2		1.1
	Switzerland	82	15	3	60	26	15	8	8	84	8	13	79	35	30	35	83	13	4		0.7
	Turkey	1	1	99	2	2	96	1	0	99	1	0	99	34	19	47	56	16	28		0 2
	United Kingdom	90	9	0	70	22	8	52	23	25	67	17	15	57	29	14	95	5	1		1.1
	United States	88	12	0	75	19	6	17	5	78	18	6	75	54	29	16	83	13	4		0.9
	OECD average	61	14	25	51	13	37	17	7	77	17	10	73	46	22	32	81	12	8		0.7
Partners	Albania	8	14	78	7	14	79	3	0	97	3	1	96	33	12	55	61	8	31		0.5
	Argentina	44	5	51	27	3	70	2	1	97	1	4	96	22	5	73	64	12	24		0.4
	Azerbaijan	40	22	38	61	17	22	35	6	59	13	3	84	5	6	89	20	4	76		0.3
	Brazil	17	7	76	14	8	78	8	1	91	7	1	92	14	5	80	21	6	73		0.8
	Bulgaria	93	5	2	97	2	1	66	20	14	84	12	4	73	22	5	92	7	1		1.1
	Colombia	21	5	75	21	1	78	14	0	86	13	1	86	58	5	36	87	5	8		1.0
	Croatia	90	10	0	84	11	5	1	1	98	2	1	97	26	34	40	68	23	9		0.4
	Dubai (UAE)	65	12	23	67	9	24	62	3	34	68	1	31	75	2	22	92	3	5		1 2
	Hong Kong-China	83	15	2	79	17	4	18	24	58	15	12	74	84	15	2	91	9	0		0.9
	Indonesia	29	12	59	26	11	63	20	9	70	23	11	66	83	11	5	78	14	8		1.0
	Jordan	6	1	93	4	1	95	1	1	98	2	0	98	83	1	17	70	2	28		0.4
	Kazakhstan	88	10	2	95	4	2	17	10	73	8	10	82	8	13	79	17	19	64		0.7
	Kyrgyzstan	74	14	11	68	13	19	18	4	77	13	3	84	12	7	81	19	7	74		0.6
	Latvia	94	4	2	96	4	0	10	15	75	18	25	57	62	25	12	81	16	3		0.7
	Liechtenstein	41	0	59	37	0	63	6	0	94	39	17	45	37	0	63	100	0	0		1.0
	Lithuania	96	4	0	99	1	0	11	7	81	6	8	86	25	27	48	42	29	28		0.5
	Macao-China	92	4	4	91	5	4	91	4	5	90	4	5	95	5	0	84	16	0		1.0
	Montenegro	89	11	0	82	18	0	0	5	95	10	11	78	12	21	68	65	22	13		0.3
	Panama	22	3	76	20	8	72	14	5	81	14	8	79	70	15	15	43	10	47		0.9
	Peru	38	15	47	30	9	61	22	2	76	22	2	77	60	9	31	79	6	15		1.3
	Qatar	52	3	44	54	5	41	47	3	50	47	4	50	43	4	53	52	4	44		1 2
	Romania	1	9	91	4	11	86	0	2	97	1	4	95	7	25	68	40	13	47		0.1
	Russian Federation	95	4	1	95	5	0	35	15	50	29	20	51	8	30	63	46	28	27		0.7
	Serbia	72	28	1	64	30	7	1	8	90	16	19	65	9	27	64	74	16	10		0.3
	Shanghai-China	98	2	0	99	1	0	36	5	59	43	6	51	91	2	6	98	1	1		1.1
	Singapore	14	38	48	14	24	62	4	3	93	7	17	75	49	22	29	91	8	1		0.6
	Chinese Taipei	73	13	14	74	14	12	18	7	75	23	7	70	50	13	37	78	8	14		1.0
	Thailand	30	20	50	59	12	28	29	14	56	72	24	5	70	20	10	90	7	2		1.1
	Trinidad and Tobago	17	14	69	6	4	90	2	1	96	6	5	89	46	28	26	75	12	12		0.6
	Tunisia	2	0	98	1	0	99	1	1	99	1	0	99	10	18	72	78	13	9		0.3
	Uruguay	17	5	78	13	1	86	3	1	96	2	1	96	13	12	75	49	16	35		0.6



Source: OECD, *PISA 2009 Database*, Table IV.3.5.



Figure 2.7 (2/2)

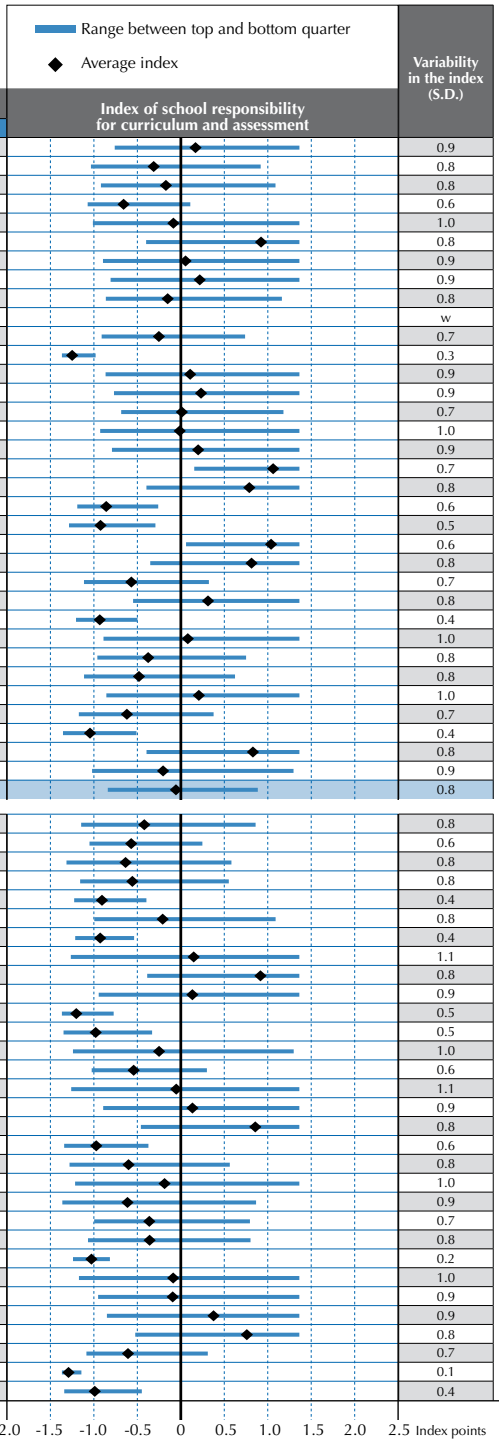
How much autonomy individual schools have over resource allocation

Percentage of students in schools of 15-year-olds in schools whose principals reported that only "principals and/or teachers", only "regional and/or national education authority"or both "principals and/or teachers" and "regional and/or national education authority" have a considerable responsibility for the following tasks

A Establishing student assessment policies
B Choosing which textbooks are used
C Determining course content
D Deciding which courses are offered

1 Only "principals and/or teachers"
2 Both "principals and/or teachers" and "regional and/or national education authority"
3 Only "regional and/or national education authority"

		A			B			C			D			Index of school responsibility for curriculum and assessment	Variability in the index (S.D.)
		1	2	3	1	2	3	1	2	3	1	2	3		
OECD	Australia	65	33	2	92	8	0	46	40	14	75	24	1		0.9
	Austria	57	27	15	94	5	1	37	40	23	32	40	29		0.8
	Belgium	78	19	4	94	4	1	32	42	26	40	46	13		0.8
	Canada	28	62	10	40	49	11	12	51	38	44	54	3		0.6
	Chile	72	21	6	73	20	7	43	22	35	64	20	16		1.0
	Czech Republic	95	5	0	89	11	1	83	16	1	88	11	1		0.8
	Denmark	61	28	11	100	0	0	56	32	12	47	39	14		0.9
	Estonia	63	33	3	66	32	2	66	30	4	79	20	2		0.9
	Finland	50	43	7	98	2	0	32	52	16	55	39	6		0.8
	France	w	w	w	w	w	w	w	w	w	w	w	w		w
	Germany	71	21	9	84	13	3	21	47	32	80	18	2		0.7
	Greece	20	12	68	7	8	85	1	3	96	6	5	88		0.3
	Hungary	94	6	0	98	2	0	49	36	15	43	28	29		0.9
	Iceland	92	8	1	93	4	3	61	26	13	48	42	10		0.9
	Ireland	87	13	0	97	3	0	29	37	34	78	21	1		0.7
	Israel	80	20	0	53	43	4	52	44	5	44	50	6		1.0
	Italy	91	8	1	99	1	0	59	27	14	49	25	27		0.9
	Japan	98	2	0	89	8	3	93	6	1	94	5	2		0.7
	Korea	92	6	2	96	4	0	89	8	2	79	17	4		0.8
	Luxembourg	9	33	58	13	80	7	9	72	20	18	61	21		0.6
	Mexico	56	15	29	63	11	26	14	7	79	5	5	91		0.5
	Netherlands	99	1	0	100	0	0	87	12	1	89	10	1		0.6
	New Zealand	81	17	2	99	1	0	79	20	1	92	8	0		0.8
	Norway	38	36	27	97	2	1	30	40	30	23	33	44		0.7
	Poland	92	8	0	92	8	0	93	7	0	40	31	29		0.8
	Portugal	35	37	28	98	2	0	5	3	92	10	5	86		0.4
	Slovak Republic	76	21	3	56	39	5	48	47	5	52	48	1		1.0
	Slovenia	46	48	5	72	27	1	34	59	6	28	52	20		0.8
	Spain	44	34	23	95	5	0	32	31	37	30	31	39		0.8
	Sweden	66	30	3	99	1	0	66	26	8	53	25	22		1.0
	Switzerland	57	27	16	40	40	20	21	41	38	24	50	27		0.7
	Turkey	42	29	30	14	18	68	9	15	76	14	21	65		0.4
	United Kingdom	88	12	0	98	2	0	77	20	2	86	14	0		0.8
	United States	46	40	13	62	28	10	36	46	18	58	37	4		0.9
	OECD average	66	23	11	78	15	8	45	31	24	50	28	21		0.8
Partners	Albania	51	16	33	91	8	1	35	7	57	35	12	53		0.8
	Argentina	74	20	6	81	16	3	28	43	29	8	30	61		0.6
	Azerbaijan	54	8	38	50	6	43	27	9	64	37	5	58		0.8
	Brazil	47	27	26	88	9	2	35	25	40	18	17	65		0.8
	Bulgaria	25	37	38	88	12	1	10	26	65	10	15	75		0.4
	Colombia	39	21	39	92	3	4	69	23	8	64	14	23		0.8
	Croatia	26	36	38	63	34	3	11	50	39	2	25	72		0.4
	Dubai (UAE)	77	10	13	55	17	27	62	13	26	59	16	25		1.1
	Hong Kong-China	93	7	0	93	7	0	81	17	2	87	13	0		0.8
	Indonesia	67	28	6	80	13	7	75	18	7	49	23	28		0.9
	Jordan	27	4	70	4	1	95	7	1	93	7	1	92		0.5
	Kazakhstan	31	22	47	16	14	70	11	18	71	40	22	37		0.5
	Kyrgyzstan	65	8	26	68	8	23	59	10	31	44	7	49		1.0
	Latvia	56	40	4	71	27	2	19	46	36	30	42	28		0.6
	Liechtenstein	69	25	6	54	5	40	41	0	59	53	9	38		1.1
	Lithuania	75	20	5	89	11	1	50	35	15	75	20	5		0.9
	Macao-China	95	0	5	100	0	0	94	6	0	81	14	4		0.8
	Montenegro	40	32	28	5	30	65	5	34	61	20	36	44		0.6
	Panama	41	25	34	52	26	22	41	23	36	26	23	51		0.8
	Peru	75	15	10	52	12	37	53	23	24	45	18	37		1.0
	Qatar	45	18	37	37	16	47	31	9	60	35	17	48		0.9
	Romania	42	36	22	86	13	1	46	33	20	31	41	29		0.7
	Russian Federation	63	25	12	65	27	8	21	40	39	71	22	7		0.8
	Serbia	49	44	7	19	59	23	2	41	57	0	12	87		0.2
	Shanghai-China	86	9	5	49	17	34	45	22	33	52	28	20		1.0
	Singapore	57	41	2	72	24	3	44	38	18	66	31	4		0.9
	Chinese Taipei	74	17	8	92	8	0	81	16	3	68	25	7		0.9
	Thailand	79	18	2	89	10	1	89	11	0	91	8	1		0.8
	Trinidad and Tobago	50	45	5	29	62	10	21	40	39	34	51	15		0.7
	Tunisia	11	11	78	0	1	99	3	14	83	4	9	87		0.1
	Uruguay	23	30	47	31	36	33	3	26	71	21	19	59		0.4



Source: OECD, *PISA 2009 Database*, Table IV.3.6.

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A desire for increased flexibility in the labor market, including to accommodate maternity/paternity leave, has led to increased part-time employment across many sectors of the economy, among them teaching. On average across OECD countries, about one in six teachers works on a part-time basis in public institutions at primary and lower secondary levels of education.[30] In some countries, part-time work is common among teachers: between one out of five and one out of three teachers in Australia, the Flemish Community of Belgium, Iceland, and New Zealand work part time, as do more than one-third of teachers in Norway and Sweden, and nearly half the teachers in Germany (primary education) and the Netherlands.

Part-time work, which is widespread in many countries, may best be authorized at school level, according to local requirements.

In the majority of OECD countries, part-time employment opportunities depend upon a decision taken at the school level or by local authorities/government; in five of the countries with the largest proportions of part-time employment, the decision is taken at the school level. Schools recognize that their teaching and school organization requirements change; and these countries have some flexibility in their teacher workforce that reflects the changing requirements of the schools.

There is considerable evidence that some beginning teachers, no matter how well prepared and supported, struggle to perform well on the job, or find that the job does not meet their expectations. In a number of countries, a formal probationary process, combined with adequate teacher support, offers an opportunity for both new teachers and their employers to assess whether teaching is the right career for them.

Probationary periods can be crucial in ensuring that suitable people become teachers; but the length of these periods varies greatly across countries.

In some countries, the successful completion of probation is acknowledged as a major step in the teaching career. Among 26 countries with comparable data in the OECD's *Education at a Glance*, 16 countries have a mandatory probation period for teachers. This period usually lasts for one year, but in some countries (Greece, Luxembourg) it lasts for two years, and in Germany it can even be extended to three years. In seven OECD countries, teachers receive job tenure after completing their probationary period. In some countries, such as Austria, six years are necessary to achieve job tenure, whereas there is only a one-month probation period. In some countries a period of time is necessary to hold the tenure, even if there is no probation period. For example, a teacher needs six months to get tenure without any probation period in Mexico, two years to achieve tenure in Iceland, and three years in the Flemish Community of Belgium.

Limited mobility of teachers between schools, and between teaching and other occupations, can restrict the spread of new ideas and approaches, and result in teachers having few opportunities for diverse career experiences. It can also lead to an inequitable distribution of teachers, where teachers do not move from the most favored schools. In some cases the lack of mobility means that some regions of the country might have teacher shortages while others have an oversupply of teachers. In some countries, providing incentives for greater mobility and removing barriers are important policy responses. In countries with different educational jurisdictions, such as federal systems, the mutual recognition of teaching qualifications is crucial, as it ensures that entitlements to leave and retirement benefits move with the teacher. Recognizing the skills and experience gained outside education is also an important means of encouraging greater career mobility among teachers, as is providing flexible re-entry pathways to the profession. International mobility of teachers is also a growing phenomenon, raising issues of recognition of qualifications, certifications and procedures for recruitment and induction.[31]

Education systems could become more dynamic if teachers became more mobile...

Given the large number of teachers and applicants involved in most school systems, it is often difficult and costly for employers to use extensive information when selecting candidates. It can be just as difficult for candidates for teaching positions to have precise information about the schools to which they apply, or even about broad trends in the labor market and the available vacancies. Such information gaps and limitations mean that many application and selection decisions are sub-optimal. The development of transparent and prompt systems to close the information gaps between teachers and schools is essential for an effectively functioning teacher labor market, especially where schools are more

... and information flows in the teacher labor market were improved.



directly involved in teacher recruitment and selection. Some countries require all teaching vacancies to be posted, and create websites where the information is centralized or establish a network of agencies to co-ordinate and foster recruitment activities. Since imbalances in the teacher labor market can take a long time to be rectified, tools for monitoring and projecting teacher demand and supply under different scenarios can also help.

PROVIDING FOR ATTRACTIVE CAREERS

Teacher policy needs to ensure that teachers work in an environment that facilitates success and that encourages effective teachers to continue in teaching.

Teacher policy needs to ensure that teachers work in an environment that facilitates success and that encourages effective teachers to continue in teaching. There is concern in a number of countries that the rates at which teachers are leaving the profession are compounding school staffing problems and leading to a loss of teaching expertise. Also of concern is that teacher attrition rates tend to be higher in the first few years of teaching, while they decline the longer that teachers are in the profession, before they increase again as teachers approach retirement.[32] This implies that large private and social costs are being incurred in preparing some people for a profession that they found did not meet their expectations, or that was insufficiently rewarding, or which they found difficult, or some combination of these factors. It underlines the importance for beginning teachers to participate in structured induction programs involving a reduced teaching load, trained mentor teachers in schools, and close partnerships with teacher education institutions, and for school systems to ensure that the criteria and processes used to allocate teachers to schools are designed such that new teachers are not concentrated in the more difficult and unpopular locations.

Box 2.2. Providing greater career diversity in Australia, England and Wales, Ireland and Quebec (Canada)

In ***Australia***, teachers typically have access to a career structure that involves two to four stages, with annual salary increments within each stage. The stages normally range from beginning teacher to experienced teacher, to experienced teacher with responsibility (leading teacher) or learning area or grade-level co-coordinator, assistant principal, principal, and regional/district office positions. Advancement from one stage to the next, especially at the higher levels, usually requires applying for widely advertised vacancies. As they move up the scale, teachers are expected to have deeper levels of knowledge, demonstrate more sophisticated and effective teaching, take on responsibility for co-curricular aspects of the school, assist colleagues and so on. By "leading teacher" stage, they are expected to demonstrate exemplary teaching, educational leadership, and the ability to initiate and manage change.

In ***England and Wales***, the new career grade of Advanced Skills Teacher (AST), introduced in 1998, is designed to supply an alternative route for career development for teachers who wish to stay in the classroom. Their role is to provide pedagogic leadership within their own and other schools. Typically, they will spend 20% of their time in an "outreach" role supporting professional development of their colleagues, and teach in class for the remaining time. Teachers can take up an AST post at any point in their career, but in order to do so they must pass the AST assessment. They prepare a portfolio that shows how they meet the prescribed standards for the grade, which is evaluated by an external assessor. The assessor also interviews the applicants and observes their professional practice. In July 2004, some 5 000 teachers had passed the AST assessment. The intention is that the grade will ultimately form between 3% and 5% of the workforce.

Ireland has introduced four categories of promotion posts: Principal, Deputy Principal, Assistant Principal, and Special Duties Teacher. Each has special management duties and receives both salary and time allowances. In addition to classroom teaching, Assistant Principals and Special Duties Teachers have special responsibility for academic, administrative and pastoral matters, including timetabling arrangements, liaising with parents' associations, supervising the maintenance and availability of school equipment, and so on. They are selected by a panel, which consists of a Principal, chair of the Board of Management, and an independent external assessor. Over the course of their careers, about 50% of teachers can expect to receive one of these positions.

...

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In ***Quebec***, experienced teachers can work as mentors for student teachers. Experienced teachers coach and guide the student teachers and undertake specific training. They receive either additional pay or a reduction in classroom teaching responsibilities. About 12 000 teachers participate in the mentor program. Some of these experienced teachers also have an opportunity to become co-researchers with university staff and to participate in collaborative studies on subjects such as teaching, learning, classroom management and student success or failure. In addition, experienced teachers may be released from some of their normal duties to provide support for less experienced colleagues.

Teaching careers are about more than pay.

Although attractive salaries are clearly important for making teaching more appealing and retaining effective teachers, the OECD's *Teachers Matter* study concludes that policy needs to address more than pay:

- Teachers place considerable emphasis on the quality of their relations with students and colleagues, on feeling supported by school leaders, on good working conditions, and on opportunities to develop their skills. Some countries are therefore placing greater emphasis on teacher evaluations to support improvement in teaching practice. While these evaluations are designed mainly to enhance classroom practice, they create opportunities for teachers' work to be recognized and celebrated, and help both teachers and schools to identify professional development priorities. They can also provide a basis for rewarding teachers for exemplary performance.
- Teaching careers can benefit from greater diversification, which can help meet school needs and also offer more opportunities and recognition for teachers. In most countries, opportunities for promotion and new responsibilities are generally limited for teachers who want to stay in the classroom. Promotions generally involve teachers spending less time in classrooms, and thus diminish one of the major sources of job satisfaction. Even for those who would like to take on more roles outside the classroom, in many countries, those opportunities are limited. Some countries are moving to open more career opportunities for teachers, spurred, in part, by the greater variety of school roles that have been delegated significant decision-making responsibilities. Examples from OECD countries (Box 2.2) suggest that greater career diversity can be achieved by creating new positions associated with specific tasks and roles in addition to classroom teaching, which leads to greater horizontal differentiation; and through a competency-based teaching career ladder that recognizes extra responsibilities, and which leads to greater vertical differentiation. In the latter, each stage is more demanding than the prior stage, involving more responsibilities, and is open to fewer people, but is accompanied by a significant rise in status and, often, compensation. The recognition that schools and teachers need to assume a greater range of tasks and responsibilities also calls for the creation of new roles, such as mentor of beginning and trainee teachers, co-coordinator of in-service education, and school project co-coordinator.
- Greater emphasis on school leadership can help address the need for teachers to feel valued and supported in their work. In addition, well-trained professional and administrative staff can help reduce the burden on teachers, better facilities for staff preparation and planning would help build collegiality, and more flexible working conditions, especially for more experienced teachers, would prevent career-burnout and retain important skills in schools.

Some countries use periodic reviews of teacher certification as an alternative to lifelong tenure...

As noted before, teachers are largely employed as public servants, and in a number of countries this is associated with tenured employment. While some may consider security of employment as an incentive to become a teacher, there may not be sufficient incentives or support systems for all teachers to continuously review their skills and improve their practice, especially where there are only limited mechanisms for teacher appraisal and accountability. Tenured employment can also make it difficult to adjust teacher numbers when enrolments decline or curricula change, and may mean that the burden of adjustment falls on those who lack tenure, commonly those near the beginning of their careers.



Box 2.3. Addressing the scale of professional development

For the past twenty years, China has been expanding elementary, secondary and higher education at an astonishing rate. Now China is going beyond expansion of access to a focus on quality. So teacher quality is crucial. China has 12 million teachers. Teachers have always been respected in China but China's economic growth has created competition for talent. So teachers are now a major focus of national policy. Over the past few years, major investments in the quality of rural teachers have been made. For example, in 2006 the central government created special three-year posts, paid for by the central government, to enable provinces to hire more teachers. Provinces hired 185 000 new teachers and 87% of them continued after three years.

Under the 2010-20 Education Plan, China is trying to raise the social status of teachers by highlighting their role in economic development. The Plan also calls for raising teachers' salaries to the level of local civil servants and aims to create an atmosphere in which teachers are highly respected. The Ministry of Education is designing a step-by-step process of professional development linked to a career ladder of beginning, medium and high-level teachers. Teachers will have to undertake 360 hours of professional training over five years in order to be recertified. Again, there is a strong focus on teachers in more rural areas. In 2010, 1.1 million teachers will be trained with an emphasis on 23 provinces in central and western China. Upper level students from teachers colleges will do an internship in a rural school that allows a teacher from a rural community to leave for six months of professional development. There is also extensive use of technology to support teachers through a satellite-based transmission of training programs using master teachers. The government is also trying to improve living conditions for teachers in rural areas.

...which requires an open, fair and transparent system of teacher appraisal, involving teaching peers, school leaders and external experts who are trained and resourced for these tasks.

In some countries teachers need to renew their teacher certificates after a period of time, and often need to demonstrate that they have participated in on-going professional development and coursework to increase, deepen, and strengthen their knowledge. The basis for renewal can be as simple as an attestation that the teacher is continuing to meet standards of performance that are agreed throughout the teaching profession. Such systems must ensure an open, fair and transparent system of teacher appraisal, involving teaching peers, school leaders and external experts who are properly trained and resourced for these tasks – and who are themselves evaluated on a regular basis. Underpinning these models is the view that the interests of students will be better served where teachers achieve employment security by continuing to do a good job, rather than by regulation that effectively guarantees their employment. Periodic reviews are also an opportunity to recognize and acknowledge quality teaching. Some countries have fair but speedy mechanisms to address ineffective teaching. Teachers in these countries have the opportunity and support to improve but, if they do not, they can be moved either into other roles or out of the school system.

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Chapter 3

TEACHER EVALUATION AND COMPENSATION

Teacher evaluation is essential for improving the individual performance of teachers and the collective performance of education systems. Designing teacher-appraisal methods is not easy, and requires the objectives of accountability and improvement to be carefully balanced. A crucial feature is what criteria teachers are appraised against, including, but not limited to, student performance. Also important are the degree to which teachers improve their professional skills and, crucially, the part they play in improving the school and system as a whole. In this way, evaluation and appraisal need to be well aligned with the process of system change. However, it is not enough to appraise the right things; the ways in which appraisal is followed through will determine its impact. At present, many teachers feel that appraisal has no or little consequence. School leaders need to become more skilled at using it intelligently, and evaluation needs to be more closely connected with career development and diversity. A specific issue is the extent and style of links between assessed performance, career advancement, and compensation. Whatever system is chosen, it must be well understood and transparently applied.



IN SEARCH OF AN EFFECTIVE TEACHER APPRAISAL SYSTEM

Teacher appraisal is advancing from checking whether teachers are doing their job to helping them improve.

The role of teacher appraisal has changed in recent years. Historically, in most countries it focused on monitoring to ensure adherence to centrally established procedures, policies and practices. In most education systems the focus has now shifted to how teacher appraisal affects learning outcomes (Box 3.2).

New approaches to teacher appraisal seek to improve learning outcomes through fostering and targeting teacher professional development and holding teachers accountable...

Retaining effective teachers implies not only that all teachers have the opportunities, support and incentives to continue to improve and perform at high levels, but also that ineffective teachers do not remain in the profession. Some groups in public discussion want to focus mainly on the latter issue, to the detriment of the image and achievements of the large majority of teachers. Others do not want to acknowledge that this is a real problem.

Effective teacher appraisal can help to improve teachers' practices by identifying strengths and weaknesses for further professional development – the improvement function. This involves helping teachers learn about, reflect on, and adjust their practice. Teacher appraisal can also help to hold teachers accountable for their performance in enhancing student learning – the accountability function. This typically entails performance-based career advancement and/or salaries, bonus pay and, in some countries, the possibility of sanctions for underperformance. It also usually involves evaluating performance at nodal points in a teacher's career.

...but achieving both these aims simultaneously is challenging...

Combining the improvement and accountability functions into a single teacher-appraisal process raises many challenges, and comparative research on the effectiveness of different models is just beginning to emerge. For example, when evaluation is oriented towards improving practice within schools, teachers are typically willing to reveal their weaknesses, in the expectation that conveying that information will lead to more effective decisions on developmental needs and teacher education. However, when teachers are confronted with potential consequences of evaluation on their career and salary, they are less inclined to reveal weaknesses in their performance, and the improvement function, which builds on trust in the relationship between appraiser and the appraised, may be jeopardized. In practice, countries usually use some combination of these approaches that integrates multiple purposes and methodologies.

...and requires careful implementation.

Any teacher-appraisal system needs to be implemented with care. This involves reconciling the diverging interests of stakeholders, carefully analyzing policy alternatives and their likely impact, and discussing them with stakeholders to aim towards consensus. Teachers can and do see appraisal and feedback in positive terms. For example, 80% of teachers in the Teaching and Learning International Survey (TALIS) reported that it was helpful in developing their work as teachers; and almost half of teachers reported that it led to a teacher-development or training plan to improve their teaching.[33] One way of ensuring that teachers see such evaluation in positive terms is to involve them in school evaluations, in particular by organizing school self-evaluations as a collective process in which teachers take responsibility.

Effective appraisal requires the development of considerable expertise in the system, including training evaluators, establishing evaluation processes and aligning broader school reforms, such as professional development opportunities, with evaluation and assessment strategies. All of these require considerable resources, including time.

Summit participants reported a wide range of views on approaches to teacher evaluation.

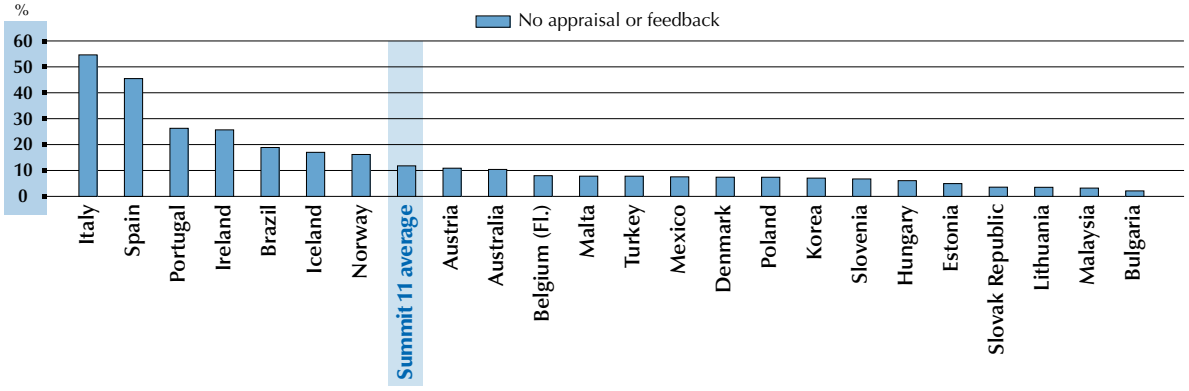
It was not surprising that the issue of designing and implementing fair and effective teacher evaluation systems provoked the most controversial discussion at the Summit. The evaluation approaches of countries reported in the Summit vary from structured government-mandated performance management systems like Singapore's (Box 3.4), to school-based systems relying on self and peer appraisal, like Finland's. Denmark reported on a teacher evaluation scheme that 94% of teachers voted for, which mainly relies on good school leaders to be in classrooms regularly and discussing teaching directly with

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teachers. The Canadian province of Ontario reported on a system with some similarities to Singapore's, with evaluations based on sixteen competencies that are set by a professional college and managed by teachers and principals. New teachers are reviewed twice a year and experienced teachers once every five years, but all teachers have annual learning plans. However, unlike Singapore, Ontario's evaluations are not linked to pay. Some countries, such as Norway and Japan, reported placing great emphasis on the school itself as the unit of evaluation. In Norway, the move towards team teaching means that students are increasingly shared. In Japan, great emphasis is placed on teachers working collaboratively to improve performance. Poland reported about efforts to replace its system of individual teacher appraisals with a system in which school-level evaluations are closely interlinked with individual teacher evaluations.[34]

Figure 3.1

Percentage of teachers without appraisal in the last 18 months



Note: "Summit 11" represents the average figure for the countries that were represented in the International Summit on the Teaching Profession.
Countries are ranked in descending order of the percentage of teachers who have received no appraisal or feedback.
Source: OECD (2009), *Creating Effective Teaching and Learning Environments: First Results from TALIS,* Tables 5.1 and 5.3.

As the notes from the Summit suggest, a host of questions were raised – the balance between teacher and school evaluations, the definition of quality and criteria to be used, the need for training for people conducting the evaluations, how to protect against discrimination, the relationship to compensation, and finally, the dangers of distorting an education system by relying on narrow measures of effectiveness.[35] Some of these issues are discussed in this publication. In order to make progress on any of these fronts, it will be essential for governments and teacher organizations to work together to invent a new vision for the teaching profession. It will also be necessary to move from a conversation among elites to engage a broader dialog with other stakeholders in the system – parents, students, employers. Several participants suggested that information and social media technologies could be used to give broader voice to teachers, parents, students and others who have a stake in the success of the education system.

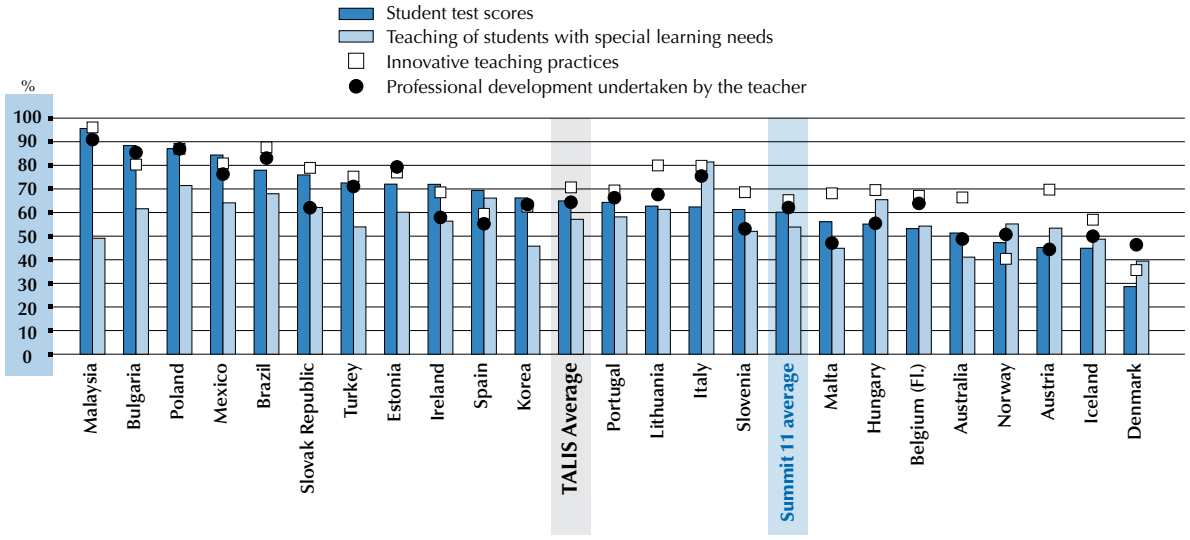
While improving student learning outcomes is the central objective of teachers' work, the quality of those outcomes is not the only measure of the quality of teaching. Across OECD countries, teachers are judged on a range of criteria, such as:

- teacher qualifications, including teacher credentials, years of service, degrees, certifications and other relevant professional development;
- how teachers operate in the classroom setting, including attitudes, expectations and personal characteristics, as well as strategies, methods and actions employed in their interaction with students; and
- measures of teacher effectiveness, based on an assessment of the degree to which teachers contribute to students' learning outcomes as well as their knowledge of their field and pedagogical practice (Figure 3.2).

The criteria used to evaluate teachers center on learning outcomes, although they also assess significant inputs, such as teacher qualifications and the learning environment created in classrooms...

Figure 3.2

Criteria for teacher appraisal and feedback



Note: 'Summit 11'' represents the average figure for the countries that were represented in the International Summit on the Teaching Profession.
Countries are ranked in descending order of the importance of student test scores in teacher appraisal and feedback.
Source: OECD (2009), *Creating Effective Teaching and Learning Environments: First Results from TALIS,* Table 5.4.

Across countries, such criteria are assessed by a variety of instruments, including scores of standardized student assessments, classroom observations, student-generated ratings, peer ratings, school principal and/or administrator ratings, self-evaluations, teacher interviews and portfolios, parental ratings, competence-based tests, and other indirect measures.

...but the key requirement is to align appraisals with system objectives and school evaluations.

These criteria need to be aligned with the objectives of the system and the schools. Aligning criteria for school evaluation with those for teacher appraisal and feedback can emphasize the importance of policy objectives at the school level and give teachers and school principals an incentive to meet such objectives.

MAXIMIZING THE IMPACT OF TEACHER APPRAISAL

Appraisal, feedback and evaluation still have limited impact, which could be improved.

While many countries have innovative teacher-appraisal systems, in some they are still relatively rare or have limited impact. One in five teachers surveyed in TALIS work in schools that had not had a self-evaluation in the past five years, and one in eight received no appraisal of or feedback on their work during the prior 18 months (Figure 3.1). Moreover, only a minority of teachers reported that appraisal and evaluation affects their professional development (one in four), their career advancement (one in six) or their pay (one in ten) (Figure 3.3). Three-quarters reported that they would receive no recognition for improving the quality of their teaching, a similar number said that they would not be rewarded for being innovative, and only just over a quarter reported that teachers would be dismissed because of sustained poor performance (Figure 3.4). These are particularly worrying shortfalls in school systems where teachers are being urged to find creative approaches to teaching in rapidly changing learning environments, yet are more likely to be rewarded for seniority, even if they are underperforming, than for self-improvement or innovation.

This suggests considerable scope for improving the impact of evaluation, appraisal and feedback. Experiences from some countries show that the link between appraisal and improvement can be low-key and low-cost, and that appraisal can include self-evaluation, informal peer evaluation, classroom observation, and structured conversations and regular feedback from the principal and experienced peers. In addition to celebrating quality

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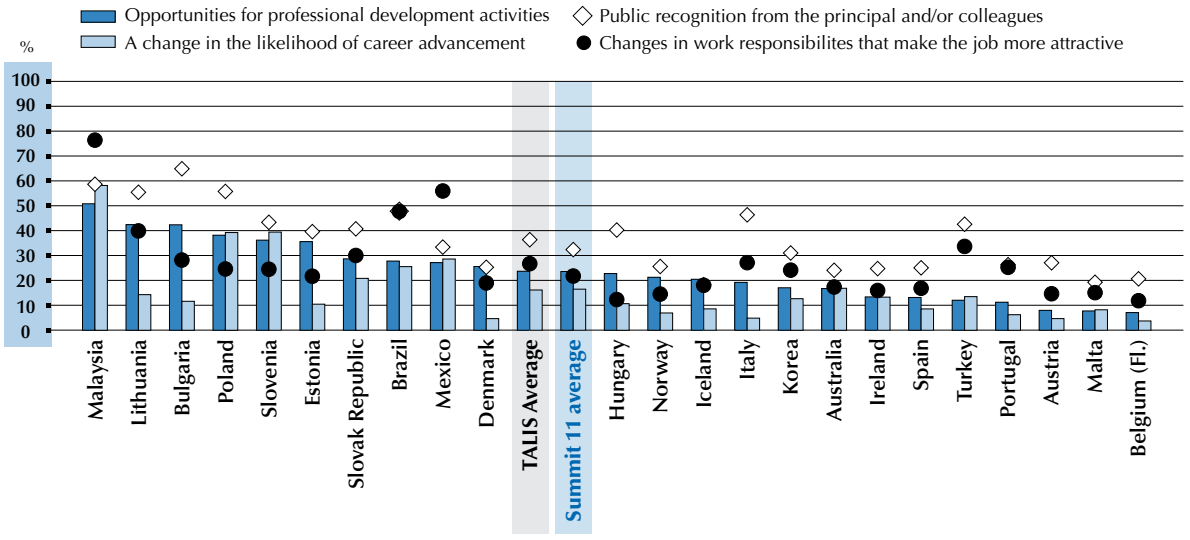
teaching and identifying areas for improvement, appraisals can also provide a basis for rewarding good teachers. Time allowances, sabbatical periods, opportunities for school-based research, support for post-graduate study, or opportunities for in-service education are just a few examples of the kinds of rewards for exemplary performance that could be offered if budget constraints do not allow for raises in salaries.

Improved appraisal and feedback can have beneficial effects on teachers, improving their job satisfaction and personal development as well as their effectiveness in implementing priorities for improvement.

Data from TALIS show that where teachers receive feedback on their work, they are more likely to find it fair than threatening. On average, eight in ten teachers surveyed in TALIS who received feedback thought it was fair, and in all countries but Korea that proportion was more than six in ten. More than three-quarters of teachers also considered it helpful for their work, while the majority said it improved their job satisfaction and development as teachers, without reducing job security. These findings are important, given fears that appraisal and feedback linked to accountability will undermine teachers. Moreover, appraisals can help teachers build confidence in themselves: the more feedback teachers in TALIS received on specific aspects of their work, the more they reported that they trust their own abilities in these areas. They also reported that appraisal leads to changes in the specific aspects of their teaching on which it focuses. In some cases, the focus of appraisal mirrored the areas emphasized in schools' evaluation, facilitating policy makers' efforts to set a framework to influence teachers' work, creating a coherent link between policy priorities and changes in teachers' work and teaching practices.[36]

Figure 3.3

Impact of teacher appraisal on career

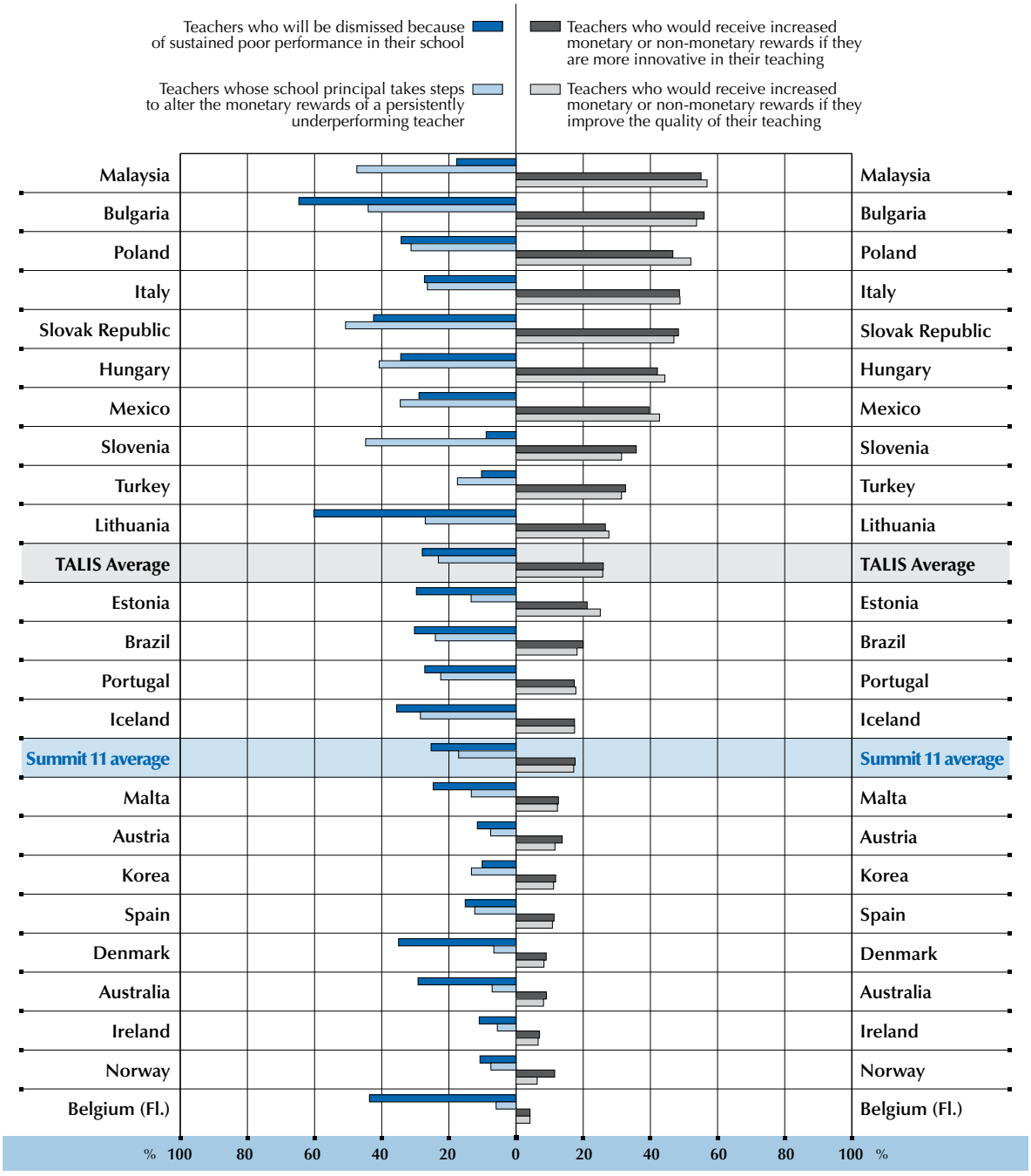


Note: "Summit 11" represents the average figure for the countries that were represented in the International Summit on the Teaching Profession.
Countries are ranked in descending order of changes in teachers' opportunities for professional development activities.
Source: OECD (2009), *Creating Effective Teaching and Learning Environments: First Results from TALIS,* Table 5.5.

Strengthening the system of teacher appraisal and feedback can also contribute to developing teaching skills within schools, according to teachers' reports. For example, greater emphasis on the framework for evaluating education in schools can strengthen links between school evaluations and teacher appraisal and feedback. The results of appraisal are often also used to plan the professional development of individual teachers. In turn, closer links with career progression have the benefit of addressing what teachers report as a severe lack of recognition for their development, and the perception that teachers' rewards are not properly linked to their effectiveness (Figure 3.4).

Figure 3.4

Consequences of teacher performance as reported by teachers



Note: ''Summit 11'' represents the average figure for the countries that were represented in the International Summit on the Teaching Profession.

Countries are ranked in descending order of percentage of teachers reporting to receive increased monetary or non-monetary rewards for an improvement in the quality of their teaching.

Source: OECD (2009), *Creating Effective Teaching and Learning Environments: First Results from TALIS,* Table 5.9.

All this shows that it is possible to overcome concerns about appraisal practices if the evaluation culture of schools and school systems is constructive, collaborative and formative. For policy makers, administrators, school principals and teachers, these findings highlight a dual benefit of appraisal and feedback, both to teachers personally and to the development of their teaching.

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Linking recognition and rewards to teacher effectiveness is not just a matter of carrying out appraisals but also of school leaders adopting effective methods for identifying good performance. The fact that nearly four times as many teachers say that their principal does not identify effective teaching as say that they have not recently been appraised indicates the need for follow-through. This underlines the fact that the effectiveness of teacher appraisal critically relies on ensuring that those who design evaluation activities, those who undertake them and those who use their results all have the skills required to do so. In particular, successful feedback mechanisms require those involved to be clear about their responsibilities and to develop the required competencies to carry out these roles.

Effective teacher appraisal requires school leaders and others to develop new competencies...

Thus, competencies for using feedback to improve practice are vital to ensure that evaluation and assessment procedures are effective. Assessment for improving performance requires that actors, such as teachers, are included in the process of school development and improvement. As a result, it is appropriate to include training for evaluation in initial teacher education alongside the development of research skills. Similarly, the preparation to become a school leader is expected to include educational leadership, with some emphasis on feedback mechanisms (Figure 3.5). Particular groups, such as inspectorates, are also in a good position to engage in modeling and disseminating good practice in areas such as school assessment and teacher appraisal.

Teacher reports that appraisal and feedback have contributed to their development suggest that such systems also contribute to school improvement. Appraisal of teachers and subsequent feedback can help stakeholders to improve schools through more informed decision making. Such improvement efforts can be driven by objectives that consider schools as learning organizations that use evaluation to analyze the relationships between inputs, processes and outputs in order to develop practices that build on identified strengths and address weaknesses.

...and good appraisal and feedback can contribute to the improvement of schools as learning organizations.

DESIGNING EFFECTIVE COMPENSATION SYSTEMS

Some Summit participants argued that compensation should not be tied to evaluation, either on principle because it is not fair to put the burden of a dysfunctional school system primarily on teachers – or because of negative side effects. Other countries are working to overcome these concerns and to include some element of financial rewards for performance. And surveys of teachers show that they welcome appraisal and feedback and many report that a good appraisal too often does not lead to any recognition or reward.

The most controversial topic discussed at the Summit was whether or not teacher evaluations should be tied to compensation.

As noted in Chapter 1, career advancement opportunities, salaries and working conditions are important for attracting, developing and retaining skilled and high-quality teachers and are intertwined. As teacher salaries represent by far the largest single cost in school education, compensation schemes are a critical consideration for policy makers seeking to maintain both the quality of teaching and a balanced education budget. Decisions on compensation involve trade-offs among related factors, such as ratios of students to teaching staff, class size, instruction time planned for students, and designated number of teaching hours. Data from PISA show that high-performing education systems tend to prioritize the quality of teachers, including through attractive compensation, over other inputs, most notably class size.

Overall teachers' pay varies across countries...

In a competitive labor market, the equilibrium rate of salaries paid to teachers across school programs and geographic regions of a country would reflect the supply of and demand for teachers. This is generally not the case in education, as salaries and other working conditions are often set centrally for all teachers – although this has been changing in some countries, notably Sweden, where the government now only sets a minimum starting salary and pay is negotiated between the principal and the teacher (Box 3.1). In most countries, however, teachers' salaries and conditions remain policy-malleable factors that can affect whether the number of qualified teachers meets the needs of the system (Boxes 3.3 and 3.4). As described in Chapter 1, teachers' salary levels vary considerably across countries but tend to remain clearly below other graduates' salaries.



Figure 3.5

School principals' views of their involvement in school matters

Index of school principal's leadership based on the reports of school principals of 15-year-old students

- A I make sure that the professional development activities of teachers are in accordance with the teaching goals of the school.
- B I ensure that teachers work according to the school's educational goals.
- C I observe instruction in classrooms.
- D I use student performance results to develop the school's educational goals.
- E I give teachers suggestions as to how they can improve their teaching.
- F I monitor students' work.
- G When a teacher has problems in his/her classroom, I take the initiative to discuss matters.
- H I inform teachers about possibilities for updating their knowledge and skills.
- I I check to see whether classroom activities are in keeping with our educational goals.
- J I take exam results into account in decisions regarding curriculum development.
- K I ensure that there is clarity concerning the responsibility for co-ordinating the curriculum.
- L When a teacher brings up a classroom problem, we solve the problem together.
- M I pay attention to disruptive behaviour in classrooms.
- N I take over lessons from teachers who are unexpectedly absent.

		Percentage of students in schools whose principals reported that the following activities and behaviours occurred "quite often" or "very often" during the last school year													Range between top and bottom quarter / Average index	Variability in the index (S.D.)
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	
OECD	Australia	98	99	64	93	76	58	89	95	81	81	97	93	94	32	1.0
	Austria	89	92	41	60	67	86	84	79	67	22	75	92	87	53	0.8
	Belgium	95	97	43	42	68	33	89	90	82	46	74	98	96	4	0.8
	Canada	98	98	77	91	86	60	95	95	86	63	87	99	98	19	1.0
	Chile	97	98	55	93	95	73	90	96	82	84	94	97	97	62	1.1
	Czech Republic	95	98	57	81	79	93	86	98	83	59	93	96	75	23	0.8
	Denmark	86	89	25	44	53	39	94	91	76	25	76	99	95	29	0.6
	Estonia	92	94	59	84	58	75	72	93	57	62	87	83	79	24	0.9
	Finland	64	75	9	46	40	61	77	95	59	13	77	98	94	39	0.7
	France	w	w	w	w	w	w	w	w	w	w	w	w	w	w	w
	Germany	82	94	40	57	53	82	80	85	57	33	73	95	84	42	0.7
	Greece	40	78	12	61	53	46	97	96	67	34	69	98	96	63	1.0
	Hungary	93	99	54	84	62	84	89	91	65	73	86	94	91	41	0.8
	Iceland	88	89	39	78	77	69	87	96	54	58	87	100	75	26	0.7
	Ireland	88	88	14	64	41	50	88	92	62	78	88	97	97	39	0.9
	Israel	94	99	46	87	85	81	94	89	86	90	94	97	98	26	0.9
	Italy	97	99	39	86	75	87	96	98	88	77	92	98	98	18	0.9
	Japan	43	51	37	30	38	40	29	50	31	37	29	61	60	17	0.9
	Korea	80	85	42	64	68	56	75	69	60	46	63	79	68	7	1 2
	Luxembourg	87	98	32	65	52	64	96	67	74	32	47	98	98	23	1.0
	Mexico	95	97	68	94	89	90	95	91	92	62	90	97	96	43	1.0
	Netherlands	95	97	52	66	73	50	76	82	79	75	80	86	71	16	0.7
	New Zealand	99	98	68	98	73	42	78	84	74	87	97	83	94	12	1.0
	Norway	81	88	24	70	49	55	90	91	48	47	81	98	95	28	0.6
	Poland	94	97	93	95	89	96	91	99	92	71	80	97	93	37	0.8
	Portugal	93	97	9	94	65	49	91	89	48	82	97	99	97	7	0.7
	Slovak Republic	97	99	86	87	86	90	86	98	91	76	96	91	91	15	0.7
	Slovenia	99	100	77	78	85	90	90	95	85	65	93	98	94	23	0.8
	Spain	86	97	28	85	55	45	86	86	66	71	92	99	99	63	0.9
	Sweden	90	96	38	83	63	29	89	90	52	68	93	98	87	13	0.8
	Switzerland	72	82	64	34	60	61	85	80	59	17	54	92	83	31	0.8
	Turkey	85	95	70	93	85	90	75	90	87	78	93	97	99	36	0.9
	United Kingdom	100	100	93	100	92	88	90	96	95	97	99	96	97	29	0.9
	United States	98	98	95	96	94	72	95	97	94	88	90	97	96	16	1.1
	OECD average	88	93	50	75	69	66	86	89	72	61	82	94	90	29	0.9
Partners	Albania	97	100	98	99	94	94	90	88	93	87	93	96	96	47	0.8
	Argentina	95	98	63	90	96	84	94	91	86	66	87	98	96	43	0.9
	Azerbaijan	95	96	97	89	97	99	86	96	99	86	90	90	99	77	1.0
	Brazil	99	99	60	94	94	91	97	97	91	94	94	99	99	44	1.1
	Bulgaria	100	100	92	95	79	93	87	98	94	71	98	91	96	29	0.8
	Colombia	98	99	45	85	92	88	90	96	82	87	92	96	96	31	1 2
	Croatia	94	98	70	80	92	96	96	95	98	76	95	99	100	19	0.8
	Dubai (UAE)	100	100	95	97	98	93	98	99	98	90	93	98	97	39	1 2
	Hong Kong-China	99	99	99	97	100	93	96	98	95	92	97	96	96	45	0.9
	Indonesia	94	99	88	91	99	77	89	96	96	95	96	81	93	47	1.0
	Jordan	99	100	100	99	100	98	99	99	99	81	81	100	99	90	1.1
	Kazakhstan	96	98	98	95	97	97	85	98	99	60	87	86	89	17	0.8
	Kyrgyzstan	90	92	98	90	94	98	89	96	95	82	87	86	81	29	0.9
	Latvia	96	97	80	97	83	86	85	94	85	75	83	76	85	30	0.8
	Liechtenstein	53	21	3	15	14	46	82	16	10	0	13	96	58	44	0.7
	Lithuania	97	98	47	92	75	60	74	89	55	65	89	95	83	7	0.8
	Macao-China	100	100	88	74	82	86	93	76	86	52	88	90	90	45	0.9
	Montenegro	95	100	88	97	97	100	92	100	99	84	100	100	96	23	0.7
	Panama	91	95	86	88	95	84	90	92	95	85	88	97	94	43	1.1
	Peru	94	98	86	88	93	80	80	94	92	84	91	91	95	45	1.1
	Qatar	96	100	100	98	97	94	95	95	98	84	87	96	98	28	1.1
	Romania	98	100	87	98	90	90	96	98	99	91	99	100	99	40	0.8
	Russian Federation	99	99	92	89	87	95	80	99	97	55	97	96	86	31	0.9
	Serbia	97	100	67	90	91	82	97	99	87	93	91	97	97	44	0.8
	Shanghai-China	98	98	94	57	99	69	91	93	96	70	98	99	89	14	0.8
	Singapore	100	100	80	99	94	66	93	93	93	98	98	97	96	8	0.9
	Chinese Taipei	98	98	92	84	86	94	86	98	88	90	95	97	95	20	0.9
	Thailand	94	99	88	98	95	97	94	98	94	96	98	97	97	45	0.9
	Trinidad and Tobago	97	98	60	86	88	71	94	95	84	92	95	97	98	26	1.0
	Tunisia	84	97	92	92	97	60	97	82	84	40	59	99	99	45	1.1
	Uruguay	85	98	89	90	90	81	92	94	84	45	73	98	100	25	1.0



Note: Higher values on the index indicate greater involvement of school principals in school matters.
Source: OECD, *PISA 2009 Database*, Table IV.4.8.

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Box 3.1. Individual pay in Sweden

In Sweden, pay is now negotiated between the principal and the teacher.

One of the most radical approaches to compensation systems has been implemented in Sweden, where the federal government establishes minimum starting salaries and leaves the decisions about individual teachers' salaries to be negotiated annually by the principal and the teacher. If the teacher requests assistance, the teachers' union can participate in the negotiation. In Sweden, the centrally bargained fixed-pay scheme for teachers was abolished in 1995 as part of a package designed to enhance local autonomy and flexibility in the school system. The government committed itself to raising teachers' salaries substantially over a five-year period, but on the condition that not all teachers received the same raise. This means that there is no fixed upper limit and only a minimum basic salary is centrally negotiated, along with the aggregate rise in the teacher-salary bill. Salaries are negotiated when a teacher is hired, and teacher and employer agree on the salary to be paid at the beginning of the term of employment. The individual negotiation involves: (1) teachers' qualification areas: teachers in upper secondary schools have higher salaries than teachers in compulsory schools or teachers in pre-schools; (2) the labor market situation: in regions where teacher shortages are more acute, teachers get higher salaries; the same occurs for certain subjects like mathematics or science; (3) the performance of the teacher: the collective central agreement requires that pay raises be linked to improved performance, allowing schools to differentiate the pay of teachers with similar tasks; and (4) the range of responsibilities of teachers: principals can reward teachers if they work harder and take up more tasks than generally expected.

There is now much greater variety in teachers' pay in Sweden, with those teachers in areas of shortage and with higher demonstrated performance able to negotiate a higher salary. The scheme is underpinned by a system of central government grants to ensure that low-income municipalities are able to compete effectively for teachers and other staff in the service sectors of the municipality. Sweden, with its individual teacher pay system introduced in 1995, provides an interesting example of a country that has attempted to combine a strong tradition of teacher unionism and consultative processes with opportunities for flexible responses and non-standardized working conditions at the school level. The system was at first strongly contested by unions and teacher organizations, but now enjoys an over 70% approval rate among unionized teachers.

Box 3.2. Identifying and certifying outstanding teachers

In the United States, the National Board for Professional Teaching Standards has established standards.

The National Board for Professional Teaching Standards (NBPTS) was created in 1987, on the recommendation of the Carnegie Task Force on Teaching as a Profession, to "establish high and rigorous standards for what accomplished teachers should know and be able to do". The goal of Board Certification, modeled on that in other professions, was to identify and certify outstanding teachers, provide a framework for teacher professional development and create a system through which outstanding teachers could receive salary supplements and be available for new roles in schools. The Board was developed with the active support of the American Federation of Teachers and the National Education Association and now has certificates in 25 fields, defined by subject matter and developmental level. Teachers complete ten assessments over a period of more than a year, including portfolios of student work, videos of classroom practices, examples of impact on student learning, review by peers, expert evaluations, and assessments of subject-matter knowledge. Today, more than 90 000 teachers have taken National Board Certification. Thirty-two states and more than 700 districts offer fee support or salary supplements. A Congressionally mandated review of studies of the effectiveness of NBPTS teachers found teachers who earned NBPTS certification tended to be more effective than teachers who had not earned NBPTS certification, although it did not establish a causal relationship. It concluded that existing research "neither proves nor refutes" the idea that pursuing NBPTS certification leads to improvements in effectiveness. A number of other countries are now looking at the NBPTS standards and processes as a potential model.



Box 3.3. Linking pay to work

In Denver, Colorado, teachers get additional pay linked to factors such as professional improvement, good evaluation and student progress.

Denver's Professional Compensation (ProComp) system was initially developed by a joint task force of district, union and community representatives. This work began in 2002, and the group's proposal was accepted by a vote of teachers in 2004. The program began with local funding, and then started to receive federal funds under the Teacher Incentive Fund program in 2006. As part of the ProComp system, teachers receive additional compensation based on several factors, including (1) teacher knowledge and skills, as obtained through targeted professional development; (2) high evaluation ratings; (3) teaching in high-need schools and subjects; and (4) demonstrated student growth, both at the classroom and the whole-school level. District and union leadership report ongoing collaboration both to improve the ProComp system and to improve results in the district in general. A recent study published by the University of Colorado at Boulder found a strong impact on student achievement, with improvements in teacher effectiveness leading to improved learning outcomes and increases in teacher retention. The federal government continues to support innovative approaches to teacher evaluation, compensation, professional development, and career advancement through the recently expanded Teacher Incentive Fund program.

...as does the structure of salary rewards, especially in terms of how salaries increase in the course of a career...

Comparing salary levels at different points in a career indicates how pay progresses through teachers' careers. Some countries concentrate salary increases early in the career, some save higher rewards for more experienced employees, while for others progress is steady throughout a career.[37] There is some evidence that a sizeable proportion of teachers and school administrators do not want to move into higher positions in the hierarchy in schools, such as school principal. This may be because the negative aspects of a promotion outweigh positive aspects, such as increased salaries, prestige and other rewards. If this is the case, then the promotion can be made more attractive either by changing the duties and requirements of the position or by changing the salary and other rewards.

Deferred compensation is a key incentive for workers in many industries. This rewards employees for staying in organizations or professions and for meeting established performance criteria. Some form of deferred compensation exists in the teachers' salary structures of most countries. In OECD countries, statutory salaries for primary, lower and upper secondary general teachers with 15 years of experience are, on average, 38%, 39% and 43% higher, respectively, than starting salaries. Furthermore, the increases from starting salary to the top of the salary scale are, on average, 71%, 70% and 74%, respectively (see also Annex A).[38]

The number of years it takes for a teacher to advance through the salary scale also varies substantially across countries. In lower secondary education, teachers in Australia, Estonia, Denmark, New Zealand and Scotland reach the highest step on the salary scale within six to nine years. Monetary incentives therefore disappear relatively quickly compared to other countries. If job satisfaction and performance are determined, at least in part, by prospects of salary increases, difficulties may arise as teachers approach the peak in their age-earnings profiles.

A number of countries have both steep and flat rises in teachers' salaries that vary across teachers' tenure. For example, teachers in Germany and Luxembourg have an opportunity for similar salary increases in the first 15 years, but then face very different growth rates. In Luxembourg salaries rise faster, while in Germany increases are relatively small. Policy makers in these countries thus need to consider how to retain the more experienced teachers.

...as do additional payments, whether linked to extra responsibilities, family status, or performance.

In addition to basic pay scales, school systems increasingly offer additional payments or other rewards for teachers (Figure 3.6). These may take the form of financial remuneration and/or reduction in the number of teaching hours. In some cases, such as in Greece and Iceland, long service is rewarded by reductions in teaching hours. In Portugal, teachers

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may receive a salary increase and a reduction in teaching time during the time they carry out special tasks or activities, such as educating student teachers, guidance counseling, etc. Together with the starting salary, such payments may affect a person's decision to enter or stay in the teaching profession. Additional payments early in a career may include family allowances and bonuses for working in certain locations, and higher initial salaries for higher-than-minimum teaching certification or qualifications, such as qualifications in multiple subjects or certification to teach students with special educational needs. Data on additional payments[39] fall into three broad areas:

- those based on responsibilities assumed by teachers and on particular conditions (*e.g.* additional management responsibilities or teaching in high-need regions, or disadvantaged schools);
- those based on the family status or demographic characteristics; and
- those based on teachers' qualifications, teacher education and performance (*e.g.* higher than the minimum qualifications and/or completing professional development activities).

Figure 3.6 (1/2)

Criteria for additional payments in public institutions

		Experience			Criteria based on teaching conditions/responsibilities																				
		Years of experience as a teacher			Management responsibilities in addition to teaching duties			Teaching more classes or hours than required by full-time contract			Special tasks (career guidance or counselling)			Teaching in a disadvantaged, remote or high cost area (location allowance)			Special activities (*e.g.* sports and drama clubs, homework clubs, summer school, etc.)			Teaching students with special educational needs (in regular schools)			Teaching courses in a particular field		
OECD	Australia	–			–									▲							▲				
	Austria	–	▲			▲			▲			▲							△							
	Belgium (Fl.)	–								△																
	Belgium (Fr.)	–											△													
	Chile	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Czech Republic	–	▲	△	–	▲	△		▲	△		▲	△					▲	△	–	▲	△			
	Denmark	–	▲	△	–	▲	△		▲	△		▲	△	–	▲	△		▲	△		▲	△		▲	△
	England	–	▲	△	–	▲	△							–	▲	△				–	▲	△	–	▲	△
	Finland		▲		–				▲	△		▲	△	–	▲			▲	△	–			–	▲	△
	France	–				▲	△		▲	△		▲	△	–	▲				△	–					
	Germany	–			–					△															
	Greece	–				▲				△		▲			▲										
	Hungary	–				▲				△		▲			▲				△		▲				
	Iceland	–	▲	△	–	▲	△		▲	△	–	▲	△					▲	△	–	▲	△			
	Ireland	–	▲	△	–	▲								–	▲										
	Italy	–					△			△			△		▲				△						
	Japan	–				▲			▲						▲				△		▲				
	Korea	–				▲				△						△					▲			▲	
	Luxembourg	–								△			△							–					
	Mexico	–	▲	△	–	▲		–	▲		–	▲		–	▲								–	▲	
	Netherlands	–	▲	△	–	▲	△	–	▲	△	–		△	–	▲	△	–	▲	△	–	▲	△	–	▲	△
	New Zealand	–				▲						▲			▲			▲			▲			▲	
	Norway	–				▲				△	–	▲	△		▲			▲	△						
	Poland	–		△					▲			▲			▲						▲				
	Portugal	–				▲				△		▲								–					
	Scotland	–													▲										
	Slovak Republic	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Spain	–				▲									▲										
	Sweden	–			–					△				–									–		
	Switzerland	–			–					△			△						△	–					
	Turkey	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	United States	–				▲								–	▲			▲						▲	
Partners	Brazil	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Estonia	–				▲	△		▲	△	–	▲	△	–	▲	△		▲	△		▲	△			
	Israel	–			–			–			–			–						–					
	Russian Federation	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Slovenia	–			–					△			△		▲				△		▲			▲	

– : Decisions on position in base salary scale
▲ : Decisions on supplemental payments which are paid every year
△ : Decisions on supplemental incidental payments

Source: OECD (2010), *Education at a Glance 2010: OECD Indicators*. See Annex 3 for notes *(www.oecd.org/edu/eag2010)*.
Please refer to the Reader's Guide in Education at a Glance 2010 *for information concerning the symbols replacing missing data.*



Figure 3.6 (2/2)

Criteria for additional payments in public institutions

		Criteria related to teachers' qualifications, training and performance																Criteria based on demography								
		Holding an initial educational qualification higher than the minimum qualification required to enter the teaching profession			Holding a higher than minimum level of teacher certification or training obtained during professional life			Outstanding performance in teaching			Successful completion of professional development activities			Reaching high scores in the qualification examination			Holding an educational qualification in multiple subjects			Family status (married, number of children)			Age (independent of years of teaching experience)			Other		
OECD	Australia	–			–																▲							
	Austria									△											▲						▲	
	Belgium (Fl.)	–				▲																					▲	
	Belgium (Fr.)	–			–																						▲	△
	Chile	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Czech Republic							–	▲	△														–		△		
	Denmark	–	▲	△	–	▲	△		▲	△		▲	△				–	▲	△									
	England	–	▲	△				–	▲	△																		
	Finland	–			–	▲			▲			▲					–											
	France										–										▲							
	Germany																			–			–					
	Greece	–				▲															▲						–	
	Hungary	–			–					△	–							▲									▲	
	Iceland	–	▲	△	–	▲	△					▲	△			△			△					–	▲			
	Ireland	–	▲		–	▲																						
	Italy																			–								
	Japan																				▲						▲	
	Korea												△									△		▲				
	Luxembourg				–						–										▲			–				
	Mexico	–	▲		–	▲		–	▲		–	▲		–	▲													
	Netherlands	–	▲	△	–	▲	△	–	▲	△	–	▲	△	–	▲	△	–	▲	△									
	New Zealand	–			–				▲																		▲	
	Norway	–	▲			▲			▲			▲			▲			▲							▲			
	Poland	–	▲	△					▲	△	–					△											▲	△
	Portugal	–			–						–			–							▲							
	Scotland				–																							
	Slovak Republic	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Spain					▲					–																	
	Sweden	–			–			–			–			–														
	Switzerland																				▲						▲	
	Turkey	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	United States	–	▲		–	▲				△	–	▲																
Partners	Brazil	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Estonia	–			–				▲	△	–							▲	△				–					
	Israel	–			–						–									–			–					
	Russian Federation	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Slovenia		▲		–					△	–																▲	

– : Decisions on position in base salary scale
▲ : Decisions on supplemental payments which are paid every year
△ : Decisions on supplemental incidental payments

Source: OECD (2010), *Education at a Glance 2010: OECD Indicators*. See Annex 3 for notes *(www.oecd.org/edu/eag2010)*.
Please refer to the Reader's Guide in Education at a Glance 2010 *for information concerning the symbols replacing missing data.*

Less than half of OECD countries offer additional payments based on teachers' family status or demographic characteristics, and in most cases these are yearly payments.

Many countries offer additional payments based on teachers' qualifications, professional development and performance. The most common types of payments based on teachers' initial education and qualifications are for an initial education qualification higher than the minimum requirement and/or a level of teacher certification and teacher education higher than the minimum requirements. These are available in around two-thirds of OECD countries, with half of countries offering both types. They are used in nearly all countries as criteria for base salary. Eighteen countries offer additional payments for the successful completion of professional-development activities. In some countries, adjustments to the base salary are awarded to teachers annually or on an incidental basis, either by the head

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teacher or school principal, or by the local, regional or national government. Countries vary in whether they provide such payments as an addition to teachers' base salary, in the form of a yearly payment or on an incidental, or "one-off", basis.

Developing a closer relationship between teacher performance and compensation has proved difficult.

Thirteen OECD countries and two non-OECD countries with available data offer an additional payment for outstanding performance in teaching. In two-third of these countries, these are discretionary payments, and in ten, they are mostly annual additions to teachers' salaries. It is notable that in 13 of the 15 countries with available data that offer this incentive – Austria, the Czech Republic, Denmark, England, Estonia, Finland, Hungary, Mexico, the Netherlands, New Zealand, Poland, Slovenia and Sweden – the decision to award the additional payments can be made at the school level. Formal metrics, including student-achievement data, come into play in some countries, but most decisions are based on the nuanced judgments of professional colleagues who, in turn, base their opinions on multiple sources of data, only some of which are measured in any formal way.

Performance-based reward systems in OECD countries can be classified into three types: "Performance pay", which generally involves measuring teacher performance based on student outcomes and other measures and providing strong performers with higher pay and, in some cases, advancement opportunities; "Knowledge and skill-based" compensation, which generally involves higher pay for demonstrated knowledge and skills which are believed to enhance student performance; and "School-based compensation", which generally involves group-based financial rewards. Those who argue in support of performance-based rewards say that it is fairer to reward teachers who perform well rather than paying all equally; performance-based pay motivates teachers and improves student performance; and a clearer connection between spending on schools and student performance builds public support. Those who oppose performance-based pay usually argue that fair and accurate evaluation is difficult, because performance cannot be determined objectively; co-operation among teachers is reduced; teachers are not motivated by financial rewards; teaching becomes narrowly focused on the criteria being used; and the costs of implementation are too high. Research in this field is difficult and there are few reliable studies.

The experience so far with performance-based rewards raises issues about how to design such awards, including issues relating to what to reward...

Though experience with performance-based rewards systems in OECD countries is still limited, OECD research highlights a number of common design around what to reward, whom to reward and how to structure rewards.[40]

Performance-based rewards imply rewarding something more than credentials and years of experience, which have been shown to be weak indicators of teacher effectiveness. Research has shown that it is possible to evaluate effective teaching, linked with improved student results, thus making it possible, in principle, to include evaluations both of teacher performance and student performance as part of a teacher-compensation system. Whatever criteria are chosen, they need to be clear to teachers and consistently applied.

Measures of teacher performance need to be valid, reliable and agreed by teachers themselves to be fair and accurate. In some countries, these include assessments of teacher performance that are based on multiple observations by trained evaluators using a standards-based rubric that teachers believe reflects good instructional practices. Other measures of teacher performance may include contributions to school-improvement efforts or performance in specific areas based on external certifications.

Some approaches include student performance in the reward systems for teachers, which require robust data management systems that are able to connect student and teacher data. In particular, if "value-added" measures are used, databases need to be able to track student progress from year to year, to give an indication of what any individual teacher has added to a student's attainment. The Data Quality Campaign identifies a number of data requirements for such approaches.[41] Measures of student performance include test scores, enrolment in advanced courses, student attendance, student graduation rates, and student dropout rates.

Analysis of student work can provide a further measure of student performance, but it requires time and funding for a group of trained assessors to evaluate portfolios of student work and determine evidence of growth. If the tests are to be used to determine value-added progress that students have made (*i.e.* using statistical methods to analyze a student's current scores in light of past performance to get an accurate reading of the effect of the school/teacher on the student's performance), then tests needs to be designed to enable analyses of year-to-year gains in performance at the individual student level.

Box 3.4. A comprehensive approach to teacher appraisal and compensation in Singapore

Singapore takes steps to ensure that high-quality graduates can start their careers on salaries competitive with other professions, and follows through with a coherent and comprehensive system of teacher appraisal and progression.

Singapore has established a coherent and comprehensive system of teacher appraisal and progression. To this end, it uses a combination of incentives throughout the teacher's career, aligned to the goals of the system, that enable it to select and sustain effective teachers. The system has been developed over time and refinements have been added as new issues or conditions have arisen.

Once in the Singapore teaching corps, annual evaluations offer the possibility of performance bonuses of 10%-30% of base salary. Included in Singapore's Enhanced Performance Management System is an appraisal of teachers' contribution to the academic and character development of the students in their charge, their collaboration with parents and community groups, and their contribution to their colleagues' development and to the school as a whole. The Enhanced Performance Management System is not intended to digitally calibrate teacher ability or to rank teachers. It is intended as a holistic appraisal, devised at the national level but implemented and customized at the school level. It assesses teachers against key competencies including the role of the teacher in the academic and character development of their students, the pedagogic initiatives and innovations teachers have developed, the professional development they have undertaken, their contribution to their colleagues and the school, and their relationship to community organizations and to parents. Learning outcomes are defined broadly, not just by examination results. The evaluation is conducted by several professionals in the school including department heads and the principal. The standards for the evaluation were developed ten years ago as a pilot with cooperation of and input from teachers and have been refined over time as new issues and conditions develop.

The purpose of the evaluation process is to create a regular dialog between teacher and supervisor that is frequent, clear and detailed about how to improve teachers' practice. Teachers create a plan at the beginning of a year, which is reviewed and followed by mid-year and year-end reviews. It is intended primarily as a development tool. Areas of weakness become the focus of the teachers' professional development plan for the following year. It is also intended to help teachers keep up with change. Fidelity of execution and open dialog is important. The process is time-consuming but it takes a lot of effort to get people into the profession and developing a competent teacher is seen as a lifelong undertaking.

Teachers who do outstanding work receive a bonus from the school's bonus pool. The evaluations also pinpoint areas of needed improvement that form the basis of the personal professional development plan for the following year. All teachers have access to 100 hours of professional development each year, at no cost to the teacher, which they can use to make progress on their personal development plans. Poorly performing teachers are offered assistance to improve and are dismissed if they do not.

In addition, teachers receive annual reimbursements for improving their knowledge and skills through professional development, subscriptions to professional journals, language learning, or technology training. Teachers move along a series of career steps that include greater compensation for greater responsibility and contributions to the profession and the school. And to keep effective teachers in the profession, there are attractive retirement payments.

While the Singapore system includes many interesting components, it is the coherence of the whole system that is important. Because Singapore has a single system and teachers are centrally assigned, market factors within the system are not the issue they are in other countries. There are also no "hard-to-staff" schools because teachers are assigned where they are most needed, resulting in a mix of less and more experienced teachers in every school.

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A major issue is whether the rewards are targeted to individual teachers, groups of teachers or the whole school. Each approach has advantages and disadvantages.

...whom to reward, and...

Individual rewards can both select the most effective staff and motivate individuals to work harder, giving them a sense of direct control over their chances of reward. However, it can be difficult to distinguish the impact made by an individual teacher, compared to previous teachers or other factors such as the school environment.

An alternative is to consider the performance of a group of teachers as a unit – such as a grade-level teams, a disciplinary departments, or another grouping that fits a school's structure and mission. Group rewards have been found to promote staff cohesion, feelings of fairness and productivity norms, and they may foster the transfer of knowledge and mutual learning among teachers which can lead to improved results. School-wide rewards can encourage collaboration among teachers to ensure the school meets the criteria for rewards, but they may have disadvantages, such as diluting the link between individual effort and reward. Any group approach runs the risk of "free riders", but some systems seek to limit these by keeping groups small or by establishing programs to exert social pressure as well as to monitor peer contributions to the group's performance. Another consideration is whether to reward other staff than classroom teachers. Principals and assistant principals may not teach, but their work is critical to establishing an environment that is conducive to improving student achievement.

...how to structure awards.

Systems also differ in whether they structure the payout of rewards as a fixed global sum distributed according to ranked teacher performance (for example, a bonus for the top quarter of performers) or as a bonus for any teacher reaching a fixed level of teacher performance. The first has the advantage of establishing at the outset the maximum amount of money that a district or country will spend but, as noted above, may discourage effort among those who do not think they can outperform their colleagues. This disincentive can, however, be reduced where the assessment of teachers or schools takes account of contextual factors, such as socio-economic background or prior attainment, by giving teachers with the most challenging students a prospect of scoring relatively well.

The alternative of giving fixed rewards to schools or teachers meeting a specified performance level needs to specify clearly what teachers need to do to meet this requirement. It opens the possibility of earning a reward to more teachers and encourages them to develop their skills and work more effectively; but it potentially raises the amount of money that must be set aside to fund the rewards, allowing for the possibility of most or all teachers earning the bonus. To renege on the payment of rewards to teachers will doom a reward program, as teachers will question the commitment to improvement that it represents. The decision between rank-order and fixed-performance criteria as a basis for performance pay may depend on the resources available, although a system may choose to use a combination of the two.

Box 3.5. Towards the next TALIS survey

Building on the success of the first Teaching and Learning International Survey (TALIS) thirty countries are currently collaborating to develop the next TALIS survey, to be implemented in 2013. TALIS 2013 will provide insights into key factors that shape effective teaching practices and strong student learning outcomes. New insights that are expected from TALIS 2013 include:

- initial teacher training and mentoring as well as induction programmes;
- the format and content of teacher in-service professional development;
- expanded sources and methods of teacher appraisal and feedback and their perceived impact;
- distributed school leadership; and
- teacher professional and pedagogical practices, including student assessment policies and the use of ICT in the classroom.



Chapter 4

TEACHER ENGAGEMENT IN EDUCATIONAL REFORM

Learning outcomes at school are the result of what happens in classrooms, thus only reforms that are successfully implemented in classrooms can be expected to be effective. One of the key conclusions of the Summit was that teacher engagement in the development and implementation of educational reform is crucial and school reform will not work unless it is supported from the bottom up. This requires those responsible for change to both communicate their aims well and involve the stakeholders who are affected. But it also requires teachers to contribute as the architects of change, not just its implementers. Some of the most successful reforms are those supported by strong unions rather than those that keep the union role weak.



ACHIEVING EDUCATIONAL REFORM THAT WORKS

Significant improvement is possible.

While there continue to be major unresolved issues in the debate on effective teacher policies, both within and between countries, the Summit participants agreed that significant improvement is possible. Contrary to what is often assumed, a high-quality teaching force is not due simply to a traditional cultural respect for teachers but is a result of deliberate policy choices, carefully implemented over time. The highest performing countries show that thoughtfully designed and purposefully executed systemic efforts can build a high-quality teacher workforce.

Tough-minded collaboration beats tough-minded confrontation.

The previous chapters have discussed a range of features of school reform that can help make teachers more effective. These led to a key purpose of the Summit, which was examining how to achieve reforms that work for pupils through a constructive social dialogue between educational authorities and the organized teaching profession. The Summit revealed a strong consensus between governments and teacher organizations alike that major system improvement is essential and that there needs to be both pressure and support for people to get better. The Summit also revealed significant overlap between the professional conditions teachers are looking for and what is needed for school improvement but also areas where they may not be aligned.[42] Societies have different political traditions to be managed and the tensions between different stakeholder groups and within stakeholder groups, including teacher organizations and governments, are real. But many systems have found ways to work constructively with teacher organizations by establishing structures and processes for consultation, both at the school and the national level. Inclusive, consultative policy processes are slower and do not prevent conflict but over time, such an approach seems to pay dividends.

Fundamental changes to the status quo can raise uncertainties that can trigger resistance.

Fundamental changes to the status quo can raise uncertainties that can trigger resistance from stakeholders, and without the active and willing engagement of teachers, most educational reforms fail. The chances for success in reform improve through effective consultation, a willingness to compromise and, above all, through the involvement of teachers in the planning and implementation of reform. In moving beyond consultation to involvement, the reform process becomes oriented towards transforming schools into learning organizations, with teaching professionals in the lead.

At the same time, stakeholder groups should not be able to exercise a veto over educational reforms that are mandated through democratic political processes. To do so would be to risk losing the public support on which education so critically depends. It is difficult to find the right balance, but open and ongoing systematic dialogue and consultation are fundamental to the process. Such dialogue should recognize that teachers are experts in teaching and learning and thus can make an essential contribution to the design of reforms. This chapter sets out some issues to be tackled, without pretending to offer a blueprint for how to engage teachers.

Given the uncertainties that accompany change, stakeholders often value the status quo. To address this, systems need to become better at communicating and building support for change.

As in other areas of the public sector, reform can be harder if it is resisted by stakeholders who feel that they stand to lose from change. It is therefore not enough to design reforms capable of changing learning outcomes; to succeed, they need to address the legitimate concerns of stakeholders so that they are supported by those who deliver the system. This is a big challenge, in light of evidence that agents often prefer avoiding potential losses to acquiring potential gains, and to over-estimate the costs and/or under-estimate the benefits of change relative to the status quo.

In this sense, teachers are not exceptional in tending to protect the system they know in the face of uncertainty and failed reform in the past. However, this phenomenon is multiplied in educational reform because of the range of actors, including students, parents, teachers, employers and trade unions, who have stakes in educational outcomes. Uncertainty about costs is problematic because education infrastructure is large and implicates multiple levels of government, each of which is trying to minimize or shift the costs of reform.[43]

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Moreover, provider interests tend to be well organized and generally command greater public trust than do politicians. It can be hard for the latter to make the case for reform on grounds of policy outcomes, because there is no consensus about how to assess outcomes in education. This is partly due to the complex mix of goals to be pursued (equity, efficiency, quality, choice, cost-containment, etc.), but it also reflects the lack of reliable, generally accepted indicators concerning the quality of educational outcomes and their value. Evidence-based reform is difficult where the evidence base is either lacking or contested. One consequence of this is that isolated facts or bits of data, or the emergence of a single high-profile study, can have a disproportionate impact on policy debates.

In overcoming these obstacles, education systems need to employ state-of-the-art knowledge, professional know-how and adequate institutional arrangements to disseminate information and lessons about the new tasks and responsibilities inherent in the reforms. Successful reforms have often involved significant investment in staff development, or clustering reforms to build up support for them in related institutions.

Experience of reform produces some useful pointers about how to engage teachers in educational reform.

In September 2008, General Directors of Education Ministries in OECD countries met to discuss why some educational reforms succeed and others fail. They considered how to engage parents, teachers, and politicians to support reforms, and what changes the minds of stakeholders who initially resist reforms or their implementation. Several recurrent themes emerged from their exchange of experiences:

- Policy makers need to build consensus on the aims of educational reform and actively engage stakeholders, especially teachers, in formulating and implementing policy responses.
- Some reforms capitalize on external pressures or crises as part of building a compelling case for change.
- All political players and stakeholders need to develop more realistic expectations about the pace and nature of reforms to improve outcomes.
- Reforms need to be backed by sustainable financing.
- There is some shift away from reform initiatives per se towards building self-adjusting systems with rich feedback at all levels, incentives to react, and tools to strengthen capacities to deliver better outcomes.
- Investment is needed in change-management skills in the education system. Teachers need reassurance that they will be given the tools to change and recognition of their professional motivation to improve outcomes for their students.
- Evidence can be used more effectively to guide policy making, combining international benchmarks with national surveys and with inspectorates to achieve a better diagnosis.
- Evidence is most helpful when it is fed back to institutions along with information and tools about how they can use the information to improve outcomes.
- "Whole-of-government" approaches can include education in more comprehensive reforms. These need effective co-ordination and overall leadership across all the relevant ministries.

The OECD's recent review of reforms in public policy[44] suggests that, in most circumstances, it pays to closely engage those who will be most directly affected by reform. Inclusive, consultative policy processes are no guarantee against conflict when sensitive reforms are under consideration, but over time, such an approach seems to pay dividends. In particular, it can create greater trust among the parties involved (Box 4.2). This may make all stakeholders more willing to rely on commitments to steps that will mitigate the cost of reform for them.



Research literature devotes a great deal of attention to the question of when and how potential losers of reform might be compensated, whether by exempting them from the reform, at least for some period, or via some sort of alternative compensation. Failure to compensate may reinforce opposition to reform, while excessive compensation may be costly or may simply blunt the effects of the reform itself. It may also reinforce opposition to future reforms, as the perceived weakness of the government encourages agents to push for maximum concessions.

Teachers need to be active agents, not just in the implementation of reforms, but also in their design...

As noted before, teacher support for reform is also not merely an issue of politics and pragmatism. Research on the characteristics of effective professional development indicates that teachers must be active agents in analyzing their own practice in the light of professional standards, and their students' progress in the light of standards for student learning. Such engagement necessitates a clear and well-structured policy framework for reform. This depends greatly on the specific institutions and traditions of any given country. However, in every reform context, the roles and competencies of each actor need to be clearly defined. There should also be a strong commitment to sharing information, and to building trust and co-operation, as well as an explicit high-level commitment to the reform agenda from each partner.

...and reform must be underpinned by solid research and analysis.

Teacher engagement also requires consistent, co-ordinated efforts to persuade those affected of the need for reform and, in particular, to communicate the costs of non-reform. This may be particularly challenging when the opportunity costs of maintaining the status quo are less apparent than the costs of change.

Last but not least, policy design needs to be underpinned by solid research and analysis. If reform advocates can build a broad consensus among experts and the public in support of reform, and build that consensus by showing evidence of the need for reform, they are likely to be in a stronger position to implement the reforms successfully.

Recognition of the importance of engaging teachers is growing. Dialogue can involve conversations both within national professional bodies and among local groups of professionals.

At a political level, the commitment to working in partnership with teachers to reform education is growing. When OECD Education Ministers met in Dublin in March 2004, there was a clear recognition of the importance of teacher engagement: "It is vital that teachers and their professional organizations are fully engaged in the debate about educational reform, and in the implementation of change." Ministers committed themselves to consultative and participatory processes, and were encouraged by the reports from some countries of the lead that teacher organizations were taking in designing new approaches to teacher appraisal and career structures.[45] The importance of teacher engagement was also noted by the ILO/UNESCO Committee of Experts on the Application of the Recommendations concerning Teaching Personnel in 2003: "Social dialogue is the glue for successful educational reform. Without full involvement of teachers and their organizations – those most responsible for implementing reform – in key aspects of educational objectives and policies, education systems cannot hope to achieve quality education for all."[46] However, the Committee also observed that "social dialogue in education remains a fragile process of decision making in most [countries]." In 2006, the Committee noted: "The basic prerequisites for dialogue are a democratic culture, respect for rules and laws, and institutions or mechanisms that permit individuals to express their views individually or collectively through unions or associations on issues that affect their daily lives on both a personal and professional basis…this implies respect for professional freedom and the active participation of individual teachers in deciding a range of professional issues – curricula, pedagogy, student assessment and issues relating to the organization of education … educational authorities and teacher unions should try to jointly analyze problems and find solutions. Participatory processes and consultations are not a panacea to resolve … difficulties, but they are virtually the only mechanisms for overcoming suspicion and establishing a positive climate for making and implementing education policy."[47]

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In addition to consultative mechanisms, there are also institutional arrangements that can help to promote dialogue and engage teachers and their professional associations in policy formation. Several countries have institutional arrangements providing teachers and other stakeholder groups with both a forum for policy development and, critically, a mechanism for profession-led standard-setting and quality-assurance in teacher education, teacher induction, teacher performance and career development (Boxes 4.1 to 4.6). Such organizations seek to obtain for teaching the combination of professional autonomy and public accountability that has long characterized other professions, such as medicine, engineering and law. This provides teachers with greater input into the criteria for entry to their profession, the standards for career advancement, and the basis on which ineffective teachers should leave the profession. Such an approach is also consistent with the ILO/UNESCO Recommendation on the Status of Teachers, an instrument supported by UNESCO, ILO and OECD member states as well as teachers' unions.

Box 4.1. Involving unions in reform in Australia

Teacher unions are engaging in setting professional standards across the country.

National Professional Standards for Teachers were finalized by the Australian Institute for Teaching and School Leadership (AITSL) and endorsed by federal and state ministers in late December 2010. The Standards make explicit what teachers should know and be able to do across four career stages – graduate, proficient, highly accomplished and lead teacher – and across the three domains of professional knowledge, practice and engagement. AITSL includes the national education union in an independent structure that provides national leadership for the Commonwealth, state and territory governments in promoting excellence in the profession of teaching and school leadership. AITSL has responsibility for rigorous national professional standards, fostering and driving high-quality professional development for teachers and school leaders, working collaboratively across jurisdictions, and engaging with key professional bodies.

Box 4.2. Building trust in Finland

Finnish teachers have long enjoyed high professional status but only recently gained the level of trust that allows them to take responsibility for educational change.

Perhaps the greatest challenge to reform has to do with trust. Trust cannot be legislated. The strong role that trust plays in the relationship between government and teachers in Finland has suggested to some that lessons from Finland may be less relevant to other countries, especially if one views trust as a precondition for the kinds of deep institutional reforms embodied in the development of the comprehensive school. But in the case of the relationship between teachers and the larger society, the Finnish experience also shows that trust is at least as much a consequence of policy decisions as it is a pre-existing culture.

Finland has adopted a stance in which it is assumed that students will perform at their best when their teachers' morale is high, and teachers' morale will not be high if they perceive themselves to be under attack by the authorities. Trust in this case means eliciting teachers' views on what needs to be done to improve student performance, acting to the extent possible on those views, and working hard to help teachers develop the capacity required to meet their students' needs. Given the respect that teachers have historically enjoyed in Finland, there was a solid base on which to build reforms. But Finnish teachers only latterly gained their high level of autonomy over curriculum, assessment and other decisions. This granting of trust from the government, coupled with their newfound status as university graduates from highly selective programs, empowered teachers to practice their profession in ways that deepened the trust accorded them by parents and others in the community.



In addition to system-level consultative mechanisms and policy-making bodies, it is also important that teacher engagement occurs at the school level. This can mean teachers taking responsibility for local change as members of "learning communities".

Box 4.3. School-level teacher involvement in Sweden

The principle of consensus is a central feature of the Swedish decision-making process.

Dialogue and collaboration among various parties in the education sector is common, although it does not always result in consensus on changes in education policy. At the central government level, representatives of the Swedish Association of Local Authorities and the teachers' unions often participate as experts in government committees or consultation groups on school policy. Stakeholders may also present their views through review bodies in connection with official inquiries and government proposals. Apart from such organized collaboration arrangements, various forms of talks and meetings offer opportunities for dialogue and consultations among parties.

At the local level and in individual schools, the Co-determination at Work Act guarantees that employers consult with employees before making major decisions about their workplace. Moreover, the employee representatives concluded an agreement in 1992 that sets the framework for collaboration in the workplace. Under this agreement, employers and teachers seek to reach solutions on matters concerning workplace conditions.

SECURING A STRATEGIC RELATIONSHIP BETWEEN GOVERNMENT AND TEACHERS' UNIONS

Conflict between unions and reform has best been avoided not where unions are weak but where they are strong and co-operate with reform.

Unions are sometimes perceived as interfering with promising school reform programs by giving higher priority to the unions' "bread and butter" issues than to what the evidence suggests students need to succeed. But the fact is that many of the countries with the strongest student performance also have strong teachers' unions, and the better a country's education system performs, the more likely that country is working constructively with its unions and treating its teachers as trusted professional partners.[48]

The discussion at the Summit revealed that there are different models of union-government relationships around the world. As the summary from the Summit notes, while 85% of teachers are members of the union in Norway, less than half of Polish teachers belong to the union. In Asia, some high-performing systems like Japan and Hong Kong have strong unions, while others, such as Singapore and China have teacher organizations that provide representation and professional development but do not engage in collective bargaining. In the Netherlands, there is a professional teachers association that is separate from the union.[49]

As illustrated in Box 4.4, issues of collective bargaining can be successfully separated from professional issues, where teachers and their organizations collaborate with ministry staff in self-governing bodies to oversee work on entry, discipline, and the professional development of teachers.

Last but not least, teachers' unions have developed their research capacities significantly in recent years. Their research units have also developed international links, principally through the Research Network of Education International. Within countries, there is evidence of growing links between union researchers and their counterparts in ministries and those in independent research institutes and universities. These developments are important because they can facilitate a constructive dialogue based on research and evidence.

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Box 4.4. Successful collaboration in Ontario

Ontario's educational reforms were accepted by teachers because the government consulted them on its implementation and ensured that it was implemented by professionals, not bureaucrats.

In 2003, the Canadian province of Ontario initiated a comprehensive reform to raise graduation rates as well as literacy and numeracy standards. This featured (1) strategies directly focused on improving the act of teaching; (2) careful and detailed attention to implementation, along with opportunities for teachers to practice new ideas and learn from their colleagues; (3) a single, integrated strategy and one set of expectations for both teachers and students; and (4) support for the reforms from teachers. Of all of these points, the last one, gaining teacher support, has been widely regarded as the most important element.

Central to this was the signing of a four-year collective bargaining agreement with the four major teachers' unions. In reaching the accord, the ministry for education was able to negotiate items that were consistent with both its educational strategy and the unions' interests, thus providing a basis for pushing forward the education agenda while creating a sustained period of labor peace that allowed for continued focus on educational improvement.

The ministry for education devoted significant efforts to winning over teachers, schools, and unions to its vision of reform. It had a clear theory of where responsibilities lay. The role of the ministry for education was to set clear expectations and targets, provide funding, create a working collective-bargaining agreement that would support improved teaching and learning, offer external expertise, and propose support for struggling schools. The role of the district was to align its personnel and hiring policies with the overall strategy, and to support the schools as they went through continuous processes of learning. The role of the school was considered crucial, as the place where change needed to occur; and while the mission and pressure came from the top, the role of non-school contributors to the reform was to support the learning and change occurring in the schools.

At a political level, those leading the reforms made a point of involving teachers and their representatives. The deputy minister met quarterly with their main unions, with superintendents' organizations, and with principal associations to review progress. The ministry for education also created the Ontario Education Partnership Table where a wider range of stakeholders could meet with ministry officials two to four times a year. This led to Working Tables, where smaller groups of stakeholders worked in more detail on particular issues. Important to these efforts was the signing of a four-year collective bargaining agreement with the four major teachers' unions in 2005, covering 2004 to 2008. In this agreement, the ministry for education was able to negotiate changes consistent with both the educational strategy and the unions' interests, including a reduction of class size and the creation of extra preparation time, which led to the creation of 5 000 and 2 000 new jobs, respectively. The agreement also provided money to hire a full or part-time staff member in each school who was responsible for student success. A second four-year agreement was signed in 2008.

To follow through on the reforms, the ministry for education developed a comprehensive implementation strategy. The ministry for education created a new 100-person secretariat responsible for building the capacity and expertise to implement the literacy and numeracy initiatives in elementary schools. This was separate from the ministry for education, and was thus able to start fresh without the usual bureaucratic obstacles. The reform also involved creating teams in each district and each school to lead the work on literacy and numeracy. In so doing, the ministry for education paired external expertise with sustained internal time and leadership to push the initiative. The transformation team of teachers, principals and subject-matter specialists had deep, on-the-ground experience that earned them the respect of teachers and schools, rather than being seen as representing a bureaucracy.

The strategy also sought to ensure that reform was really a two-way street and not something imposed from above.

The government pursued a similar strategy for the Student Success initiative in high schools. Rather than sending out a team from the ministry for education, they gave the districts money to hire a "Student Success leader" to co-ordinate efforts in their district. The ministry for education also gave money for the district leaders to meet and share strategies. Again, each high school was given support to hire a provincially-funded Student Success teacher and was required to create a Student Success team to identify students showing early signs of academic struggle and to design appropriate interventions.



Box 4.5. Transforming government-union relations in the United States

In Montgomery County, Maryland, a collaborative model for raising performance was agreed with unions.

Montgomery County Public Schools (MCPS) is the sixteenth largest district in the United States. Long seen as a wealthy enclave, the county was becoming increasingly urbanized in 1999. Broad Acres Elementary School, located in a racially diverse neighborhood in the county's southeast corner, epitomized the challenges facing MCPS. Its students had performed so poorly on state assessments that the school qualified for restructuring. The school system faced the prospect of implementing a full-scale improvement process.

Neither school system leaders nor the Montgomery County Education Association (MCEA) believed school staff should be replaced. Instead, in 2000, collaboration between teachers and administration brought Broad Acres back from the brink and realized student-achievement levels commensurate with their peers in far wealthier areas of the county. And that is where Broad Acres has remained for the past eight years. Many schools throughout the county have replicated this process of targeted school improvement.

The collaborative culture has fostered both trust and engagement among all employee groups. An evolving outcome has been the development of three Professional Growth Systems (PGS) – for teachers, administrators, and support staff – each with a supportive Peer Assistance and Review component that allows for novice and underperforming staff to be mentored and returned to successful employment or removed from service if improvement is insufficient. The PGS integrates qualitative evaluation and professional growth. The teachers' PGS, for example, is based on six standards of performance derived from core propositions of the National Board for Professional Teaching Standards. It offers training for evaluators and teachers in order to establish a common language of successful teaching; establishes a professional growth cycle, in which a formal evaluation year is followed by sequential years dedicated to professional growth; provides for a job-embedded professional development program; and includes multiple factors in identifying teachers who will be involuntarily transferred.

In April 2010, MCEA and MCPS signed an agreement to affirm the use of student-performance data, including student and parent surveys, as required evidence for two of the six performance standards for evaluation. That initiative is representative of a shared focus on doing what's best for students.

Box 4.6. Establishing career incentives in Norway

In Norway, governments and unions have co-operated to enhance and recognize teachers' competence.

The Union of Education Norway (UEN) had long considered that there were too few career incentives for teachers. Existing career structures meant that teachers stopped teaching or taught less when they entered positions of educational leadership. In the 2008 negotiations with the central organization for local and regional governments, the UEN suggested introducing a new and higher wage scale for teachers to be promoted on the basis of competence. The suggestion was accepted, and procedures were agreed to promote highly competent teachers, as identified by the school leader. In 2008 the Norwegian Ministry of Education, the central organization for local and regional governments, the organization for teacher education institutions, and the UEN formed a partnership to introduce a system for in-service education for teachers. Around 2 000 full-time study places in colleges and universities have been set aside for full or part-time studies. Teachers who participate are granted leave of absence with full pay for 80% of normal study time. Costs for substitute teachers are shared between the central government and the local employer. However, even though there is agreement between the central government and the other important stakeholders about these and other national initiatives to enhance teacher competence, the actual implementation must be decided by the local governments as employers, a total of 430 municipalities and 19 counties. Both for economic and political reasons, many employers have not implemented these initiatives in practice.

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Conclusion

This publication has underlined the importance of developing a central role for teachers in educational change. Successful countries have shown how a teaching profession that assumes a high level of responsibility and is well rewarded can attract some of the best graduates into a teaching career. Indeed, a striking contrast between the teaching profession in different countries is its status and the caliber of its recruits. Dramatically increasing the quality and prestige of a nation's teaching corps is far from easy and cannot be done overnight. However, the many examples of reforms in this publication that have produced specific results, shown promise or that have illustrated imaginative ways of implementing change, show that the challenges can be successfully addressed. They include measures at the recruitment stage, but more importantly involve transforming the teaching profession from within. Highly qualified graduates are unlikely to be attracted to teaching if they see an existing teaching corps with low skill levels that are not trusted to act as professionals.

While there continue to be major unresolved issues in the debate on effective teacher policies, both within and between countries, the Summit participants agreed that significant improvement is possible. As this concluding report from the Summit notes, and contrary to what is often assumed, a high-quality teaching force is not due simply to a traditional cultural respect for teachers but is a result of deliberate policy choices, carefully implemented over time. The highest-performing countries show that thoughtfully designed and purposefully executed systemic efforts can build a high-quality teacher workforce.[50] The Summit also concluded that making teaching an attractive and effective profession requires supporting continuous learning, developing career structures to give new roles to teachers, and engaging strong teachers as active agents in school reform, not just implementers of plans designed by others. It also requires strengthening the knowledge base of education and developing a culture of research and reflection in schools so that teaching and learning can be based on the best available knowledge.

It was not surprising that the issue of designing and implementing fair and effective teacher evaluation systems provoked most discussion at the Summit. As the summary notes, a host of questions were raised: the balance between teacher and school evaluation; the definition of quality and criteria to be used; the need for training for people conducting the evaluations; how to protect against discrimination; the relationship to compensation; and finally, the dangers of distorting an education system through relying on narrow measures of effectiveness.[51] In order to make progress on any of these fronts, it will be essential for governments and teacher organizations to work together to invent a new vision for the teaching profession. It will also be necessary to move from a conversation among elites towards engaging a broader dialog with other stakeholders in the system – including parents, students, teachers and employers. Several participants suggested that information and social media technologies could be used to give a broader voice to teachers, parents, students and others who have a stake in the success of the education system.

The Summit also concluded that it is important that policies do not just tackle one small piece of the puzzle but are part of a comprehensive approach. If high quality teacher recruits are placed into an unchanged school environment, the system will win every time. Just as the quality of an education system cannot exceed the quality of its teachers, the quality of teaching and teachers cannot exceed the quality of the work organization in which teachers find themselves; the quality of teacher selection and education; the quality of teacher careers; and the quality of teacher evaluation.

The transformation of today's teaching force requires smarter development of professionals than is typically seen in most educations systems. While more resources need to go into such development, simply laying on more courses is not enough. Above all, professional development needs to be integrated not only into an individual teacher's career, but also school and system changes. At the career level, in-service education, appraisal and reward need to be closely aligned. At the same time, learning that improves individual competencies and collaboration among teachers to produce better instruction in the classroom must go hand-in-hand.



Finally, in a process of educational reform that too often becomes politicized, it is essential to build a constructive political process in which teachers share the main goals of reform with politicians and administrators. This does not mean that the specific interests or concerns of particular groups can be ignored; there will always need to be compromise in making changes to well-established systems, particularly when some individuals are bound to be threatened by change. However, around the world, it has been shown that collaborative models of educational reform can be highly effective.

The success of different education systems varies significantly in equipping all students with important foundation skills. It was therefore appealing to bring together education leaders from high performing and rapidly improving education systems to explore to what extent educational success and related teacher policies transcends the specific characteristics of cultures and countries. The Summit participants agreed that there was enormous value in learning from international comparisons on this subject. As the report from the Summit notes, these comparisons help to get individuals outside of their own context and established patterns of thinking, provoke imagination, show where some of the successes and failures have been, and broaden both policymakers' and teacher organizations' views of possible options and trade-offs. They can help educators to think anew, to encourage innovation, and design new approaches that are informed by the world's best practices. This Summit is therefore a springboard for ongoing discussions of teacher policy in the 21st century[51] and the next Summit on the teaching profession will take place in 2012.

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Notes

1. See OECD (2010), *PISA 2009 Results – Volumes I-V,* OECD Publishing, Paris.
2. See OECD (2009), *Creating Effective Teaching and Learning Environments: First Results from TALIS*, OECD Publishing, Paris.
3. See OECD (2005), *Teachers Matter – Attracting, Developing and Retaining Effective Teachers*, OECD Publishing, Paris.
4. See OECD (2010), *Strong Performers and Successful Reformers – Lessons from PISA for the United States,* OECD Publishing, Paris.
5. For details see *http://www.oecd.org/document/24/0,3746,en_2649_39263231_44567960_1_1_1_1,00.html.*
6. See OECD (2009), *Evaluating and Rewarding the Quality of Teachers – International Practices*, OECD Publishing, Paris.
7. See OECD (2010), *Making Reform Happen*, OECD Publishing, Paris.
8. Participants for the Summit were chosen on the basis of the performance of 15-year-old students in reading, mathematics and science on OECD's PISA 2009 assessment. To this end, the performance of these countries was averaged across the three subject areas. For data, see Annex A.
9. Asia Society (2011), *Improving Teacher Quality around the World: The International Summit on the Teaching Profession,* New York.
10. Asia Society (2011), *Improving Teacher Quality around the World: The International Summit on the Teaching Profession,* New York.
11. Asia Society (2011), *Improving Teacher Quality around the World: The International Summit on the Teaching Profession,* New York.
12. For an analysis of teacher demographics, see Indicator D8 in OECD (2003), *Education at a Glance 2003: OECD Indicators,* OECD Publishing, Paris. For updated data on the same topic, see the OECD online database at *www.oecd.org/education/eag2011.*
13. An important consideration here is the consistent finding in OECD countries that the responsiveness to incentives depends on the characteristics of individuals. For example, individuals in certain academic disciplines, such as science, and teachers with higher academic credentials are less likely to be attracted to teaching in the first place, and are less likely to return to teaching once they leave. Women often value the potential flexibility that teaching can offer, so improved leave provisions, opportunities for part-time employment and career breaks, and child care are likely to be particularly important to their career choices (for details, see OECD [2005], *Teachers Matter – Attracting, Developing and Retaining Effective Teachers*, OECD Publishing, Paris).
14. The admissions process occurs in two stages. The initial paper screen is based on the applicant's Matriculation Exam score, upper secondary school record, and out-of-school accomplishments. Those who pass that screening must then take a written exam, be observed in a teaching-like activity in which their interaction and communication skills can be assessed, and be interviewed to assess, among other things, the strength of their motivation to teach (for details see OECD [2010], *Strong Performers and Successful Reformers – Lessons from PISA for the United States,* OECD Publishing, Paris).
15. For data, see OECD (2010), *PISA 2009 Results: What Makes a School Successful? Resources, Policies and Practices*, OECD Publishing, Paris.
16. It should be noted that autonomy of schools in managing their resources is positively related to school performance in PISA 2009 only in conjunction with established accountability arrangements. In the absence of accountability arrangements, school autonomy is related negatively to school performance (for data, see OECD [2010], *PISA 2009 Results: What Makes a School Successful? Resources, Policies and Practices*, OECD Publishing, Paris).
17. For data, see OECD (2010), *PISA 2009 Results: What Makes a School Successful? Resources, Policies and Practices*, OECD Publishing, Paris.



18. In upper secondary general education, in 2009, the lowest ratios are found in the Czech Republic (0.53) and the partner countries Israel (0.56) and Slovenia (0.55). Relative teachers' salaries in primary and lower secondary education are highest in Australia (0.93 in primary, 0.94 in lower secondary), Belgium (Flemish Community) (0.90), Germany (0.89 in primary, 0.97 in lower secondary), New Zealand (0.97), Scotland (0.89), Spain (1.12 in primary, 1.26 in lower secondary) and Sweden (0.90 in primary, 0.93 in lower secondary). In upper secondary education, the ratios are highest in Belgium (Flemish Community) (1.14), Belgium (French Community) (1.10), Denmark (1.06), Finland (1.02), Germany (1.04), the Netherlands (1.07) and Spain (1.28) (for data, see the OECD's 2010 edition of *Education at a Glance,* Table D3.1).

19. See OECD (2005), *Teachers Matter – Attracting, Developing and Retaining Effective Teachers*, OECD Publishing, Paris.

20. Asia Society (2011), *Improving Teacher Quality around the World: The International Summit on the Teaching Profession,* New York.

21. See OECD (2010), *Strong Performers and Successful Reformers – Lessons from PISA for the United States,* OECD Publishing, Paris.

22. Asia Society (2011), *Improving Teacher Quality around the World: The International Summit on the Teaching Profession,* New York.

23. See page 4 of the Joint ILO/UNESCO Committee of Experts on the Application of the Recommendations concerning Teaching Personnel (CEART), Paris, October 2009.

24. See OECD (2005), *Teachers Matter – Attracting, Developing and Retaining Effective Teachers*, OECD Publishing, Paris.

25. TALIS asked teachers about their professional development activities during the 18 months prior to the survey. This period of time was chosen in order to cover activities over almost two school years in order to give a more representative picture and lessen possible distortions due to unusually busy or lean periods of development, and to ensure a manageable period for teachers' recall. Teachers were first asked to indicate whether or not they had participated in each of the following activities: (1) courses/workshops (*e.g.* on subject matter or methods and/or other education-related topics); (2) education conferences or seminars (at which teachers and/or researchers present their research results and discuss education problems); (3) qualification program (*e.g.* a degree program); (4) observation visits to other schools; (5) participation in a network of teachers formed specifically for the professional development of teachers; (6) individual or collaborative research on a topic of professional interest; and (7) mentoring and/or peer observation and coaching, as part of a formal school arrangement. Teachers were able to indicate participation in multiple activities. TALIS then asked teachers how many days of professional development they had attended in the 18 months prior to the survey and how many of these days were compulsory (for details, see OECD [2009], *Creating Effective Teaching and Learning Environments: First Results from TALIS*, OECD Publishing, Paris).

26. The intensity of teacher participation in professional development varies considerably across countries, with Korea and Mexico seeing teachers participating on average for over 30 days in 18 months, twice the average rate. Within-country variation in the intensity of professional development can also be high, most notably in Italy, Mexico, Korea, Poland and Spain (for data see OECD [2009], *Creating Effective Teaching and Learning Environments: First Results from TALIS*, OECD Publishing, Paris).

27. Jaquith, Ann, Mindich, Dan, Wei, Ruth Chung, and Darling-Hammond, Linda (2010), *Teacher Professional Learning in the United States: Case Studies of State Policies and Strategies, Technical Report,* Stanford Center for Opportunity Policy in Education and Learning Forward, December 2010.

28. For data, see OECD (2009), *Creating Effective Teaching and Learning Environments: First Results from TALIS*, OECD Publishing, Paris.

29. For data, see Figure IV.3.3a in OECD (2010), *PISA 2009 Results: What Makes a School Successful? Resources, Policies and Practices*, OECD Publishing, Paris.

30. For data, see Indicator D3 in OECD (2007), *Education at a Glance 2007: OECD Indicators,* OECD Publishing, Paris.

31. See, for example, the Commonwealth Teachers Recruitment Protocol of 2004, developed at the request of the 15th Conference of Commonwealth Education Ministers, Edinburgh, UK 2003.

32. For an analysis, see OECD (2005), *Teachers Matter – Attracting, Developing and Retaining Effective Teachers*, OECD Publishing, Paris.

33. For data, see OECD (2009), *Creating Effective Teaching and Learning Environments: First Results from TALIS*, OECD Publishing, Paris.

34. Asia Society (2011), *Improving Teacher Quality around the World: The International Summit on the Teaching Profession,* New York.

35. Asia Society (2011), *Improving Teacher Quality around the World: The International Summit on the Teaching Profession,* New York.

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36. For data, see OECD (2009), *Creating Effective Teaching and Learning Environments: First Results from TALIS*, OECD Publishing, Paris.

37. For data on starting, average and ending salaries, see OECD (2010), *Education at a Glance 2010: OECD Indicators,* OECD Publishing, Paris.

38. For data, see OECD (2010), *Education at a Glance 2010: OECD Indicators,* OECD Publishing, Paris.

39. The OECD does not collect data on payment amounts but on whether the additional payments are available and on the level at which the decision to award such payments is taken (for data, see Table D3.3a and Tables D3.3b, D3.3c and D3.3d available on line, as well as Annex 3 at *www.oecd.org/edu/eag2010*).

40. For an analysis, see OECD (2009), *Evaluating and Rewarding the Quality of Teachers – International Practices*, OECD Publishing, Paris.

41. Data Quality Campaign, 2009, *http://www.dataqualitycampaign.org/survey/elements.*

42. Asia Society (2011), *Improving Teacher Quality around the World: The International Summit on the Teaching Profession,* New York.

43. It should be noted that it is difficult to isolate the costs and benefits of particular measures because of the large number of simultaneous influences on outcomes. Thus, it is rarely possible to predict clear, identifiable links between policies and outcomes, especially given the time lags involved. It can take years to design and adopt a reform, and it may be a decade or more before its impact is really felt. This weakens not only incentives for elected politicians with limited time horizons to adopt reforms, but also the engagement of teachers who need to deliver them. In many countries, these issues are complicated by the difficulty of coordinating reform across different levels of government and across multiple regional and local jurisdictions. Education systems extend from local schools and independent universities to national ministries. The responsibilities of institutions and different levels of government vary from country to country, as do the relative importance and independence of non-public providers. Reforms need to take into account the respective responsibilities of different actors.

44. See OECD (2010), *Making Reform Happen,* OECD Publishing, Paris

45. See Dempsey, N. (2004), Chair's Summary, *Meeting of OECD Education Ministers: Raising the Quality of Learning for All*, Dublin, Ireland, *www.oecd.org/edumin2004*.

46. See ILO/UNESCO (2003), Committee of Experts on the Application of the Recommendations concerning Teaching Personnel, ILO/UNESCO (CEART), Geneva and Paris.

47. See ILO/UNESCO CEART (2006).

48. One review of the research on teacher organizations as policy actors has been published recently by Nina Bascia. See also John Bangs, John MacBeath and Maurice Galton, *Reinventing Schools, Reforming Teaching,* Cambridge, 2010.

49. Asia Society (2011), *Improving Teacher Quality around the World: The International Summit on the Teaching Profession,* New York.

50. Asia Society (2011), *Improving Teacher Quality around the World: The International Summit on the Teaching Profession,* New York.

51. Asia Society (2011), *Improving Teacher Quality around the World: The International Summit on the Teaching Profession,* New York.



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OECD (2010), *Making Reform Happen*, OECD Publishing, Paris.



Annex A
Selected comparative data from OECD sources



Figure A.1

Comparing countries' performance in reading

Statistically significantly **above** the OECD average
Not statistically significantly different from the OECD average
Statistically significantly **below** the OECD average

Mean	Comparison country	Countries whose mean score is NOT statistically significantly different from that of the comparison country
556	Shanghai-China	
539	Korea	Finland, Hong Kong-China
536	Finland	Korea, Hong Kong-China
533	Hong Kong-China	Korea, Finland
526	Singapore	Canada, New Zealand, Japan
524	Canada	Singapore, New Zealand, Japan
521	New Zealand	Singapore, Canada, Japan, Australia
520	Japan	Singapore, Canada, New Zealand, Australia, Netherlands
515	Australia	New Zealand, Japan, Netherlands
508	Netherlands	Japan, Australia, Belgium, Norway, Estonia, Switzerland, Poland, Iceland, United States, Liechtenstein, Sweden, Germany
506	Belgium	Netherlands, Norway, Estonia, Switzerland, Poland, United States, Liechtenstein
503	Norway	Netherlands, Belgium, Estonia, Switzerland, Poland, Iceland, United States, Liechtenstein, Sweden, Germany, Ireland, France
501	Estonia	Netherlands, Belgium, Norway, Switzerland, Poland, Iceland, United States, Liechtenstein, Sweden, Germany, Ireland, France, Chinese Taipei, Denmark, United Kingdom, Hungary
501	Switzerland	Netherlands, Belgium, Norway, Estonia, Poland, Iceland, United States, Liechtenstein, Sweden, Germany, Ireland, France, Chinese Taipei, Denmark, United Kingdom, Hungary
500	Poland	Netherlands, Belgium, Norway, Estonia, Switzerland, Iceland, United States, Liechtenstein, Sweden, Germany, Ireland, France, Chinese Taipei, Denmark, United Kingdom, Hungary
500	Iceland	Netherlands, Norway, Estonia, Switzerland, Poland, United States, Liechtenstein, Sweden, Germany, Ireland, France, Chinese Taipei, Hungary
500	United States	Netherlands, Belgium, Norway, Estonia, Switzerland, Poland, Iceland, Liechtenstein, Sweden, Germany, Ireland, France, Chinese Taipei, Denmark, United Kingdom, Hungary
499	Liechtenstein	Netherlands, Belgium, Norway, Estonia, Switzerland, Poland, Iceland, United States, Sweden, Germany, Ireland, France, Chinese Taipei, Denmark, United Kingdom, Hungary
497	Sweden	Netherlands, Norway, Estonia, Switzerland, Poland, Iceland, United States, Liechtenstein, Germany, Ireland, France, Chinese Taipei, Denmark, United Kingdom, Hungary, Portugal
497	Germany	Netherlands, Norway, Estonia, Switzerland, Poland, Iceland, United States, Liechtenstein, Sweden, Ireland, France, Chinese Taipei, Denmark, United Kingdom, Hungary
496	Ireland	Norway, Estonia, Switzerland, Poland, Iceland, United States, Liechtenstein, Sweden, Germany, France, Chinese Taipei, Denmark, United Kingdom, Hungary, Portugal
496	France	Norway, Estonia, Switzerland, Poland, Iceland, United States, Liechtenstein, Sweden, Germany, Ireland, Chinese Taipei, Denmark, United Kingdom, Hungary, Portugal
495	Chinese Taipei	Estonia, Switzerland, Poland, Iceland, United States, Liechtenstein, Sweden, Germany, Ireland, France, Denmark, United Kingdom, Hungary, Portugal
495	Denmark	Estonia, Switzerland, Poland, United States, Liechtenstein, Sweden, Germany, Ireland, France, Chinese Taipei, United Kingdom, Hungary, Portugal
494	United Kingdom	Estonia, Switzerland, Poland, United States, Liechtenstein, Sweden, Germany, Ireland, France, Chinese Taipei, Denmark, Hungary, Portugal
494	Hungary	Estonia, Switzerland, Poland, Iceland, United States, Liechtenstein, Sweden, Germany, Ireland, France, Chinese Taipei, Denmark, United Kingdom, Portugal
489	Portugal	Sweden, Ireland, France, Chinese Taipei, Denmark, United Kingdom, Hungary, Macao-China, Italy, Latvia, Slovenia, Greece
487	Macao-China	Portugal, Italy, Latvia, Greece
486	Italy	Portugal, Macao-China, Latvia, Slovenia, Greece, Spain
484	Latvia	Portugal, Macao-China, Italy, Slovenia, Greece, Spain, Czech Republic, Slovak Republic
483	Slovenia	Portugal, Italy, Latvia, Greece, Spain, Czech Republic
483	Greece	Portugal, Macao-China, Italy, Latvia, Slovenia, Spain, Czech Republic, Slovak Republic, Croatia, Israel
481	Spain	Italy, Latvia, Slovenia, Greece, Czech Republic, Slovak Republic, Croatia, Israel
478	Czech Republic	Latvia, Slovenia, Greece, Spain, Slovak Republic, Croatia, Israel, Luxembourg, Austria
477	Slovak Republic	Latvia, Greece, Spain, Czech Republic, Croatia, Israel, Luxembourg, Austria
476	Croatia	Greece, Spain, Czech Republic, Slovak Republic, Israel, Luxembourg, Austria, Lithuania
474	Israel	Greece, Spain, Czech Republic, Slovak Republic, Croatia, Luxembourg, Austria, Lithuania, Turkey
472	Luxembourg	Czech Republic, Slovak Republic, Croatia, Israel, Austria, Lithuania
470	Austria	Czech Republic, Slovak Republic, Croatia, Israel, Luxembourg, Lithuania, Turkey
468	Lithuania	Croatia, Israel, Luxembourg, Austria, Turkey
464	Turkey	Israel, Austria, Lithuania, Dubai (UAE), Russian Federation
459	Dubai (UAE)	Turkey, Russian Federation
459	Russian Federation	Turkey, Dubai (UAE)
449	Chile	Serbia
442	Serbia	Chile, Bulgaria
429	Bulgaria	Serbia, Uruguay, Mexico, Romania, Thailand, Trinidad and Tobago
426	Uruguay	Bulgaria, Mexico, Romania, Thailand
425	Mexico	Bulgaria, Uruguay, Romania, Thailand
424	Romania	Bulgaria, Uruguay, Mexico, Thailand, Trinidad and Tobago
421	Thailand	Bulgaria, Uruguay, Mexico, Romania, Trinidad and Tobago, Colombia
416	Trinidad and Tobago	Bulgaria, Romania, Thailand, Colombia, Brazil
413	Colombia	Thailand, Trinidad and Tobago, Brazil, Montenegro, Jordan
412	Brazil	Trinidad and Tobago, Colombia, Montenegro, Jordan
408	Montenegro	Colombia, Brazil, Jordan, Tunisia, Indonesia, Argentina
405	Jordan	Colombia, Brazil, Montenegro, Tunisia, Indonesia, Argentina
404	Tunisia	Montenegro, Jordan, Indonesia, Argentina
402	Indonesia	Montenegro, Jordan, Tunisia, Argentina
398	Argentina	Montenegro, Jordan, Tunisia, Indonesia, Kazakhstan
390	Kazakhstan	Argentina, Albania
385	Albania	Kazakhstan, Panama
372	Qatar	Panama, Peru
371	Panama	Albania, Qatar, Peru, Azerbaijan
370	Peru	Qatar, Panama, Azerbaijan
362	Azerbaijan	Panama, Peru
314	Kyrgyzstan	

Source: OECD, *PISA 2009 Database*.

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Figure A.2

Comparing countries' performance in mathematics

Statistically significantly **above** the OECD average
Not statistically significantly different from the OECD average
Statistically significantly **below** the OECD average

Mean	Comparison country	Countries whose mean score is NOT statistically significantly different from that of the comparison country
600	Shanghai-China	
562	Singapore	
555	Hong Kong-China	Korea
546	Korea	Hong Kong-China, Chinese Taipei, Finland, Liechtenstein
543	Chinese Taipei	Korea, Finland, Liechtenstein, Switzerland
541	Finland	Korea, Chinese Taipei, Liechtenstein, Switzerland
536	Liechtenstein	Korea, Chinese Taipei, Finland, Switzerland, Japan, Netherlands
534	Switzerland	Chinese Taipei, Finland, Liechtenstein, Japan, Canada, Netherlands
529	Japan	Liechtenstein, Switzerland, Canada, Netherlands, Macao-China
527	Canada	Switzerland, Japan, Netherlands, Macao-China
526	Netherlands	Liechtenstein, Switzerland, Japan, Canada, Macao-China, New Zealand
525	Macao-China	Japan, Canada, Netherlands
519	New Zealand	Netherlands, Belgium, Australia, Germany
515	Belgium	New Zealand, Australia, Germany, Estonia
514	Australia	New Zealand, Belgium, Germany, Estonia
513	Germany	New Zealand, Belgium, Australia, Estonia, Iceland
512	Estonia	Belgium, Australia, Germany, Iceland
507	Iceland	Germany, Estonia, Denmark
503	Denmark	Iceland, Slovenia, Norway, France, Slovak Republic
501	Slovenia	Denmark, Norway, France, Slovak Republic, Austria
498	Norway	Denmark, Slovenia, France, Slovak Republic, Austria, Poland, Sweden, Czech Republic, United Kingdom, Hungary
497	France	Denmark, Slovenia, Norway, Slovak Republic, Austria, Poland, Sweden, Czech Republic, United Kingdom, Hungary
497	Slovak Republic	Denmark, Slovenia, Norway, France, Austria, Poland, Sweden, Czech Republic, United Kingdom, Hungary
496	Austria	Slovenia, Norway, France, Slovak Republic, Poland, Sweden, Czech Republic, United Kingdom, Hungary, United States
495	Poland	Norway, France, Slovak Republic, Austria, Sweden, Czech Republic, United Kingdom, Hungary, Luxembourg, United States, Portugal
494	Sweden	Norway, France, Slovak Republic, Austria, Poland, Czech Republic, United Kingdom, Hungary, Luxembourg, United States, Ireland, Portugal
493	Czech Republic	Norway, France, Slovak Republic, Austria, Poland, Sweden, United Kingdom, Hungary, Luxembourg, United States, Ireland, Portugal
492	United Kingdom	Norway, France, Slovak Republic, Austria, Poland, Sweden, Czech Republic, Hungary, Luxembourg, United States, Ireland, Portugal
490	Hungary	Norway, France, Slovak Republic, Austria, Poland, Sweden, Czech Republic, United Kingdom, Luxembourg, United States, Ireland, Portugal, Spain, Italy, Latvia
489	Luxembourg	Poland, Sweden, Czech Republic, United Kingdom, Hungary, United States, Ireland, Portugal
487	United States	Austria, Poland, Sweden, Czech Republic, United Kingdom, Hungary, Luxembourg, Ireland, Portugal, Spain, Italy, Latvia
487	Ireland	Sweden, Czech Republic, United Kingdom, Hungary, Luxembourg, United States, Portugal, Spain, Italy, Latvia
487	Portugal	Poland, Sweden, Czech Republic, United Kingdom, Hungary, Luxembourg, United States, Ireland, Spain, Italy, Latvia
483	Spain	Hungary, United States, Ireland, Portugal, Italy, Latvia
483	Italy	Hungary, United States, Ireland, Portugal, Spain, Latvia
482	Latvia	Hungary, United States, Ireland, Portugal, Spain, Italy, Lithuania
477	Lithuania	Latvia
468	Russian Federation	Greece, Croatia
466	Greece	Russian Federation, Croatia
460	Croatia	Russian Federation, Greece
453	Dubai (UAE)	Israel, Turkey
447	Israel	Dubai (UAE), Turkey, Serbia
445	Turkey	Dubai (UAE), Israel, Serbia
442	Serbia	Israel, Turkey
431	Azerbaijan	Bulgaria, Romania, Uruguay
428	Bulgaria	Azerbaijan, Romania, Uruguay, Chile, Thailand, Mexico
427	Romania	Azerbaijan, Bulgaria, Uruguay, Chile, Thailand
427	Uruguay	Azerbaijan, Bulgaria, Romania, Chile
421	Chile	Bulgaria, Romania, Uruguay, Thailand, Mexico
419	Thailand	Bulgaria, Romania, Chile, Mexico, Trinidad and Tobago
419	Mexico	Bulgaria, Chile, Thailand
414	Trinidad and Tobago	Thailand
405	Kazakhstan	Montenegro
403	Montenegro	Kazakhstan
388	Argentina	Jordan, Brazil, Colombia, Albania
387	Jordan	Argentina, Brazil, Colombia, Albania
386	Brazil	Argentina, Jordan, Colombia, Albania
381	Colombia	Argentina, Jordan, Brazil, Albania, Indonesia
377	Albania	Argentina, Jordan, Brazil, Colombia, Tunisia, Indonesia
371	Tunisia	Albania, Indonesia, Qatar, Peru, Panama
371	Indonesia	Colombia, Albania, Tunisia, Qatar, Peru, Panama
368	Qatar	Tunisia, Indonesia, Peru, Panama
365	Peru	Tunisia, Indonesia, Qatar, Panama
360	Panama	Tunisia, Indonesia, Qatar, Peru
331	Kyrgyzstan	

Source: OECD, *PISA 2009 Database*.

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Figure A.3

Comparing countries' performance in science

Statistically significantly **above** the OECD average
Not statistically significantly different from the OECD average
Statistically significantly **below** the OECD average

Mean	Comparison country	Countries whose mean score is NOT statistically significantly different from that comparison country
575	Shanghai-China	
554	Finland	Hong Kong-China
549	Hong Kong-China	Finland
542	Singapore	Japan, Korea
539	Japan	Singapore, Korea, New Zealand
538	Korea	Singapore, Japan, New Zealand
532	New Zealand	Japan, Korea, Canada, Estonia, Australia, Netherlands
529	Canada	New Zealand, Estonia, Australia, Netherlands
528	Estonia	New Zealand, Canada, Australia, Netherlands, Germany, Liechtenstein
527	Australia	New Zealand, Canada, Estonia, Netherlands, Chinese Taipei, Germany, Liechtenstein
522	Netherlands	New Zealand, Canada, Estonia, Australia, Chinese Taipei, Germany, Liechtenstein, Switzerland, United Kingdom, Slovenia
520	Chinese Taipei	Australia, Netherlands, Germany, Liechtenstein, Switzerland, United Kingdom
520	Germany	Estonia, Australia, Netherlands, Chinese Taipei, Liechtenstein, Switzerland, United Kingdom
520	Liechtenstein	Estonia, Australia, Netherlands, Chinese Taipei, Germany, Switzerland, United Kingdom
517	Switzerland	Netherlands, Chinese Taipei, Germany, Liechtenstein, United Kingdom, Slovenia, Macao-China
514	United Kingdom	Netherlands, Chinese Taipei, Germany, Liechtenstein, Switzerland, Slovenia, Macao-China, Poland, Ireland
512	Slovenia	Netherlands, Switzerland, United Kingdom, Macao-China, Poland, Ireland, Belgium
511	Macao-China	Switzerland, United Kingdom, Slovenia, Poland, Ireland, Belgium
508	Poland	United Kingdom, Slovenia, Macao-China, Ireland, Belgium, Hungary, United States
508	Ireland	United Kingdom, Slovenia, Macao-China, Poland, Belgium, Hungary, United States, Czech Republic, Norway
507	Belgium	Slovenia, Macao-China, Poland, Ireland, Hungary, United States, Czech Republic, Norway, France
503	Hungary	Poland, Ireland, Belgium, United States, Czech Republic, Norway, Denmark, France, Sweden, Austria
502	United States	Poland, Ireland, Belgium, Hungary, Czech Republic, Norway, Denmark, France, Iceland, Sweden, Austria, Latvia, Portugal
500	Czech Republic	Ireland, Belgium, Hungary, United States, Norway, Denmark, France, Iceland, Sweden, Austria, Latvia, Portugal
500	Norway	Ireland, Belgium, Hungary, United States, Czech Republic, Denmark, France, Iceland, Sweden, Austria, Latvia, Portugal
499	Denmark	Hungary, United States, Czech Republic, Norway, France, Iceland, Sweden, Austria, Latvia, Portugal
498	France	Belgium, Hungary, United States, Czech Republic, Norway, Denmark, Iceland, Sweden, Austria, Latvia, Portugal, Lithuania, Slovak Republic
496	Iceland	United States, Czech Republic, Norway, Denmark, France, Sweden, Austria, Latvia, Portugal, Lithuania, Slovak Republic
495	Sweden	Hungary, United States, Czech Republic, Norway, Denmark, France, Iceland, Austria, Latvia, Portugal, Lithuania, Slovak Republic, Italy
494	Austria	Hungary, United States, Czech Republic, Norway, Denmark, France, Iceland, Sweden, Latvia, Portugal, Lithuania, Slovak Republic, Italy, Spain, Croatia
494	Latvia	United States, Czech Republic, Norway, Denmark, France, Iceland, Sweden, Austria, Portugal, Lithuania, Slovak Republic, Italy, Spain, Croatia
493	Portugal	United States, Czech Republic, Norway, Denmark, France, Iceland, Sweden, Austria, Latvia, Lithuania, Slovak Republic, Italy, Spain, Croatia
491	Lithuania	France, Iceland, Sweden, Austria, Latvia, Portugal, Slovak Republic, Italy, Spain, Croatia
490	Slovak Republic	France, Iceland, Sweden, Austria, Latvia, Portugal, Lithuania, Italy, Spain, Croatia
489	Italy	Sweden, Austria, Latvia, Portugal, Lithuania, Slovak Republic, Spain, Croatia
488	Spain	Austria, Latvia, Portugal, Lithuania, Slovak Republic, Italy, Croatia, Luxembourg
486	Croatia	Austria, Latvia, Portugal, Lithuania, Slovak Republic, Italy, Spain, Luxembourg, Russian Federation
484	Luxembourg	Spain, Croatia, Russian Federation
478	Russian Federation	Croatia, Luxembourg, Greece
470	Greece	Russian Federation, Dubai (UAE)
466	Dubai (UAE)	Greece
455	Israel	Turkey, Chile
454	Turkey	Israel, Chile
447	Chile	Israel, Turkey, Serbia, Bulgaria
443	Serbia	Chile, Bulgaria
439	Bulgaria	Chile, Serbia, Romania, Uruguay
428	Romania	Bulgaria, Uruguay, Thailand
427	Uruguay	Bulgaria, Romania, Thailand
425	Thailand	Romania, Uruguay
416	Mexico	Jordan
415	Jordan	Mexico, Trinidad and Tobago
410	Trinidad and Tobago	Jordan, Brazil
405	Brazil	Trinidad and Tobago, Colombia, Montenegro, Argentina, Tunisia, Kazakhstan
402	Colombia	Brazil, Montenegro, Argentina, Tunisia, Kazakhstan
401	Montenegro	Brazil, Colombia, Argentina, Tunisia, Kazakhstan
401	Argentina	Brazil, Colombia, Montenegro, Tunisia, Kazakhstan, Albania
401	Tunisia	Brazil, Colombia, Montenegro, Argentina, Kazakhstan
400	Kazakhstan	Brazil, Colombia, Montenegro, Argentina, Tunisia, Albania
391	Albania	Argentina, Kazakhstan, Indonesia
383	Indonesia	Albania, Qatar, Panama, Azerbaijan
379	Qatar	Indonesia, Panama
376	Panama	Indonesia, Qatar, Azerbaijan, Peru
373	Azerbaijan	Indonesia, Panama, Peru
369	Peru	Panama, Azerbaijan
330	Kyrgyzstan	

Source: OECD, *PISA 2009 Database*.

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Figure A.4

Relationship between school average socio-economic background and school resources

Disadvantaged schools are more likely to have more or better resources, in **bold** if relationship is statistically different from the OECD average

Advantaged schools are more likely to have more or better resources, in **bold** if relationship is statistically different from the OECD average

Within country correlation is not statistically significant

		Simple correlation between the school mean socio-economic background and:					
		Percentage of full-time teachers	Percentage of certified teachers among all full-time teachers	Percentage of teachers with university-level (ISCED 5A) among all full-time teachers	Index of quality of school's educational resources	Computer/student ratio	Student/teacher ratio[1]
OECD	Australia	**-0.21**	**-0.05**	0.02	**0.31**	0.01	-0.07
	Austria	-0.13	**0.21**	**0.64**	0.03	-0.05	-0.07
	Belgium	**-0.18**	0.05	**0.58**	0.02	**-0.23**	**0.66**
	Canada	0.01	**0.14**	0.03	0.18	-0.05	0.09
	Chile	-0.04	-0.01	**0.25**	**0.35**	**0.32**	-0.05
	Czech Republic	**-0.32**	**0.29**	**0.37**	0.00	0.15	0.08
	Denmark	0.01	-0.17	0.16	0.04	-0.08	**0.27**
	Estonia	0.14	0.00	0.00	0.10	-0.09	**0.43**
	Finland	**0.17**	-0.01	-0.01	0.13	-0.01	0.08
	France	c	c	c	c	c	c
	Germany	-0.15	-0.02	-0.02	0.06	-0.18	**0.28**
	Greece	-0.11	0.06	0.24	0.16	-0.12	0.25
	Hungary	**-0.33**	0.07	0.07	0.11	**-0.20**	0.02
	Iceland	**0.20**	**0.39**	**0.30**	**0.06**	**-0.41**	**0.40**
	Ireland	0.12	-0.10	-0.08	0.16	-0.03	**0.49**
	Israel	-0.08	-0.06	0.20	0.25	0.08	**-0.20**
	Italy	-0.06	**0.16**	0.13	0.15	**-0.19**	**0.50**
	Japan	-0.14	0.04	0.20	0.17	**-0.34**	**0.38**
	Korea	-0.14	0.00	-0.03	-0.04	**-0.53**	0.30
	Luxembourg	**-0.16**	**-0.01**	**0.39**	0.13	**-0.13**	**0.28**
	Mexico	-0.09	**-0.13**	-0.04	**0.59**	**0.14**	0.03
	Netherlands	**-0.34**	**-0.12**	**0.62**	0.06	-0.16	**0.38**
	New Zealand	-0.04	0.08	0.07	0.16	-0.02	0.11
	Norway	-0.05	0.04	0.15	0.14	-0.02	0.19
	Poland	-0.02	0.03	-0.05	0.06	-0.16	0.01
	Portugal	**0.14**	-0.05	0.04	0.24	-0.02	**0.39**
	Slovak Republic	-0.09	**0.28**	**-0.21**	-0.05	-0.06	0.00
	Slovenia	**0.46**	**0.32**	**0.55**	0.13	**-0.21**	**-0.25**
	Spain	**-0.29**	c	c	0.10	**-0.16**	**0.45**
	Sweden	0.05	0.01	-0.04	0.26	**0.13**	0.12
	Switzerland	-0.11	-0.07	0.24	0.10	0.03	0.06
	Turkey	0.12	-0.04	0.04	0.04	-0.06	**-0.26**
	United Kingdom	**-0.36**	0.05	-0.03	0.00	0.01	-0.10
	United States	**-0.42**	-0.24	0.10	0.22	0.06	**-0.17**
	OECD average	-0.07	0.04	0.15	0.13	-0.08	0.15
Partners	Albania	**-0.25**	0.00	**0.38**	**0.44**	**0.24**	0.15
	Argentina	0.13	0.13	0.22	**0.51**	**0.21**	-0.02
	Azerbaijan	0.05	-0.06	**0.44**	0.19	0.17	0.23
	Brazil	-0.03	0.10	0.03	**0.52**	**0.25**	**-0.20**
	Bulgaria	-0.08	0.17	0.17	0.09	-0.17	0.21
	Colombia	**-0.24**	**-0.16**	-0.08	**0.53**	**0.19**	-0.14
	Croatia	0.09	0.02	**0.28**	0.09	0.17	0.32
	Dubai (UAE)	**0.32**	**0.61**	**-0.01**	**0.34**	**0.47**	**-0.27**
	Hong Kong-China	-0.19	-0.06	0.12	0.06	0.04	0.02
	Indonesia	**0.24**	**0.27**	0.16	**0.44**	0.14	**-0.16**
	Jordan	-0.04	0.00	-0.02	0.26	0.05	0.06
	Kazakhstan	**0.23**	0.04	**0.34**	0.21	-0.12	**0.44**
	Kyrgyzstan	**0.17**	0.08	**0.35**	0.27	**0.13**	0.27
	Latvia	**0.19**	-0.03	0.19	0.14	0.00	**0.38**
	Liechtenstein	**-0.15**	0.02	**0.57**	**-0.91**	**0.79**	**0.70**
	Lithuania	**0.21**	0.09	0.19	-0.02	**-0.49**	0.21
	Macao-China	**0.11**	**0.05**	**-0.18**	**0.26**	**0.22**	**0.17**
	Montenegro	0.07	**0.32**	**0.38**	-0.11	-0.19	**0.33**
	Panama	**-0.51**	**-0.47**	-0.13	**0.68**	**0.38**	0.03
	Peru	-0.21	0.08	**0.48**	**0.53**	**0.46**	-0.02
	Qatar	**0.03**	**-0.04**	**-0.07**	**0.23**	**0.19**	**0.11**
	Romania	0.05	0.10	0.11	0.20	-0.07	-0.02
	Russian Federation	**0.18**	0.08	0.31	**0.26**	0.02	**0.29**
	Serbia	0.10	0.06	0.06	-0.01	0.00	0.11
	Shanghai-China	**0.14**	0.13	**0.32**	0.16	-0.10	**-0.13**
	Singapore	-0.13	0.00	**0.22**	**0.10**	**-0.18**	**-0.14**
	Chinese Taipei	0.12	**0.34**	0.29	0.19	-0.04	-0.07
	Thailand	0.07	0.06	0.16	**0.39**	0.00	-0.02
	Trinidad and Tobago	**-0.19**	**0.09**	**0.56**	0.12	**0.08**	**0.38**
	Tunisia	-0.06	0.00	0.20	0.13	0.15	-0.02
	Uruguay	-0.01	**0.27**	0.08	**0.33**	**0.30**	0.13

1. In contrast to the other columns, negative correlations indicate more favourable characteristics for advantaged students.

Source: OECD, *PISA 2009 Database*, Table II.2.2.

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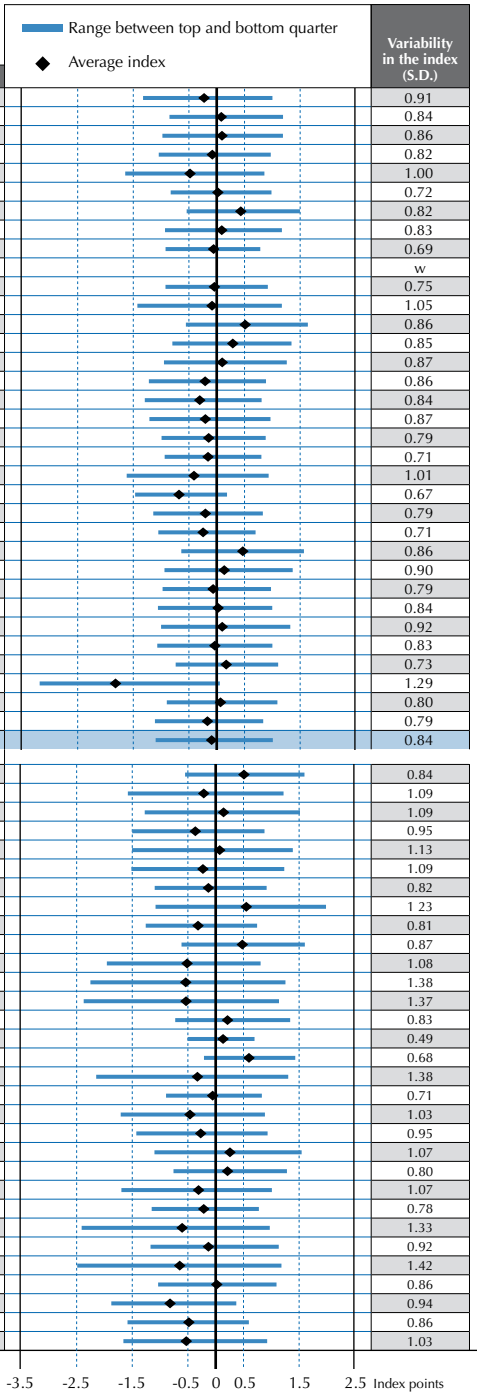
Figure A.5

School principals' views of how teacher behaviour affects students' learning

Index of teacher-related factors affecting school climate based on school principals' reports

- A Teachers' low expectations of students
- B Poor student-teacher relations
- C Teachers not meeting individual students' needs
- D Teacher absenteeism
- E Staff resisting change
- F Teachers being too strict with students
- G Students not being encouraged to achieve their full potential

		Percentage of students in schools whose principals reported that the following phenomena hindered learning "not at all" or "very little"							Variability in the index (S.D.)
		A	B	C	D	E	F	G	
OECD	Australia	68	85	58	86	61	96	78	0.91
	Austria	86	94	78	78	76	97	87	0.84
	Belgium	87	96	76	75	71	96	84	0.86
	Canada	86	89	75	88	62	94	86	0.82
	Chile	51	92	62	69	60	86	57	1.00
	Czech Republic	83	83	94	96	86	90	75	0.72
	Denmark	95	97	88	89	91	98	93	0.82
	Estonia	82	87	68	89	87	82	77	0.83
	Finland	94	88	67	80	84	97	86	0.69
	France	w	w	w	w	w	w	w	w
	Germany	82	93	77	78	70	96	89	0.75
	Greece	64	82	70	86	76	89	76	1.05
	Hungary	94	96	94	94	90	89	69	0.86
	Iceland	90	88	71	83	84	97	92	0.85
	Ireland	78	92	76	88	82	89	84	0.87
	Israel	73	86	67	71	80	90	80	0.86
	Italy	74	73	73	91	48	85	67	0.84
	Japan	76	85	71	97	63	81	61	0.87
	Korea	66	90	67	99	66	84	83	0.79
	Luxembourg	95	88	64	82	84	89	71	0.71
	Mexico	65	81	69	78	59	80	60	1.01
	Netherlands	66	90	44	62	61	86	45	0.67
	New Zealand	63	83	57	95	73	95	82	0.79
	Norway	80	90	52	75	79	98	77	0.71
	Poland	90	98	89	77	85	98	91	0.86
	Portugal	74	96	77	98	67	100	79	0.90
	Slovak Republic	87	94	88	80	79	75	78	0.79
	Slovenia	83	90	78	85	68	87	81	0.84
	Spain	75	91	85	91	67	92	74	0.92
	Sweden	77	93	64	87	67	99	75	0.83
	Switzerland	94	91	81	96	74	97	89	0.73
	Turkey	28	25	39	30	25	32	27	1.29
	United Kingdom	79	97	77	87	83	98	92	0.80
	United States	77	90	72	91	68	96	84	0.79
	OECD average	78	88	72	83	72	90	77	0.84
Partners	Albania	86	91	91	96	93	97	81	0.84
	Argentina	70	88	73	51	62	87	55	1.09
	Azerbaijan	67	67	80	82	81	91	76	1.09
	Brazil	56	89	58	70	64	92	65	0.95
	Bulgaria	73	84	70	73	87	88	72	1.13
	Colombia	66	93	66	79	49	81	63	1.09
	Croatia	79	90	75	94	58	90	72	0.82
	Dubai (UAE)	86	89	80	86	77	87	92	1 23
	Hong Kong-China	58	93	52	87	77	94	69	0.81
	Indonesia	86	96	90	97	90	92	69	0.87
	Jordan	60	62	64	58	61	86	69	1.08
	Kazakhstan	43	60	55	60	66	60	58	1.38
	Kyrgyzstan	54	71	69	66	64	65	59	1.37
	Latvia	90	93	81	91	93	89	77	0.83
	Liechtenstein	94	100	80	100	83	100	100	0.49
	Lithuania	94	99	93	98	96	99	96	0.68
	Macao-China	73	73	44	66	66	83	57	1.38
	Montenegro	85	95	73	88	88	93	58	0.71
	Panama	62	89	69	75	57	81	61	1.03
	Peru	64	91	72	85	69	83	63	0.95
	Qatar	77	80	82	88	84	88	85	1.07
	Romania	84	90	89	99	69	91	83	0.80
	Russian Federation	60	79	68	78	65	56	58	1.07
	Serbia	71	94	70	93	59	84	61	0.78
	Shanghai-China	58	59	45	71	60	73	47	1.33
	Singapore	64	83	59	84	83	90	90	0.92
	Chinese Taipei	52	57	54	70	56	67	52	1.42
	Thailand	67	82	72	90	90	68	87	0.86
	Trinidad and Tobago	45	66	34	41	54	91	71	0.94
	Tunisia	33	83	69	40	73	83	74	0.86
	Uruguay	53	92	68	35	57	94	33	1.03



Note: Higher values on the index indicate a positive teacher behaviour.
Source: OECD, *PISA 2009 Database*, Table IV.4.5.

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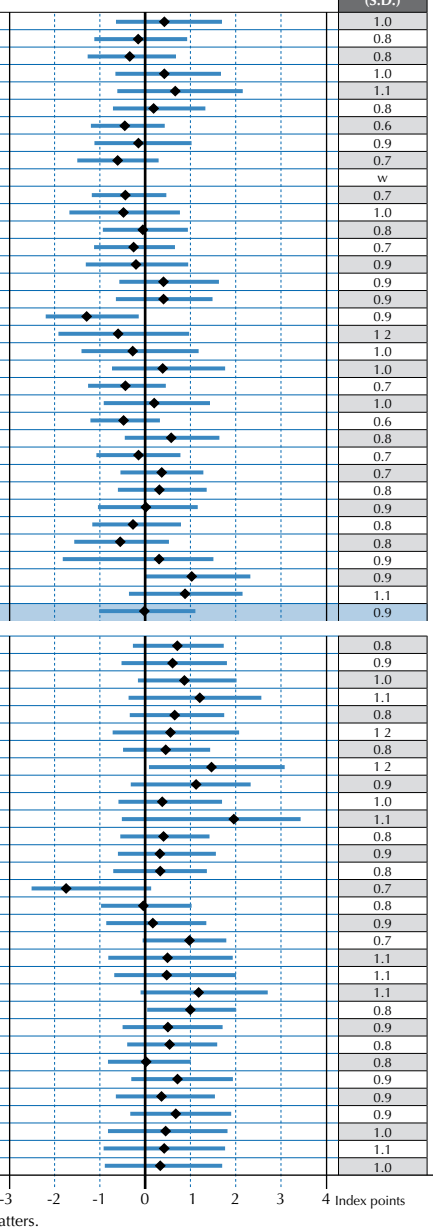
Figure A.6

School principals' views of their involvement in school matters

Index of school principal's leadership based on school principals' reports

- A I make sure that the professional development activities of teachers are in accordance with the teaching goals of the school.
- B I ensure that teachers work according to the school's educational goals.
- C I observe instruction in classrooms.
- D I use student performance results to develop the school's educational goals.
- E I give teachers suggestions as to how they can improve their teaching.
- F I monitor students' work.
- G When a teacher has problems in his/her classroom, I take the initiative to discuss matters.
- H I inform teachers about possibilities for updating their knowledge and skills.
- I I check to see whether classroom activities are in keeping with our educational goals.
- J I take exam results into account in decisions regarding curriculum development.
- K I ensure that there is clarity concerning the responsibility for co-ordinating the curriculum.
- L When a teacher brings up a classroom problem, we solve the problem together.
- M I pay attention to disruptive behaviour in classrooms.
- N I take over lessons from teachers who are unexpectedly absent.

		Percentage of students in schools whose principals reported that the following activities and behaviours occurred "quite often" or "very often" during the last school year														Variability in the index (S.D.)
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	
OECD	Australia	98	99	64	93	76	58	89	95	81	81	97	93	94	32	1.0
	Austria	89	92	41	60	67	86	84	79	67	22	75	92	87	53	0.8
	Belgium	95	97	43	42	68	33	89	90	82	46	74	98	96	4	0.8
	Canada	98	98	77	91	86	60	95	95	86	63	87	99	98	19	1.0
	Chile	97	98	55	93	95	73	90	96	82	84	94	97	97	62	1.1
	Czech Republic	95	98	57	81	79	93	86	98	83	59	93	96	75	23	0.8
	Denmark	86	89	25	44	53	39	94	91	76	25	76	99	95	29	0.6
	Estonia	92	94	59	84	58	75	72	93	57	62	87	83	79	24	0.9
	Finland	64	75	9	46	40	61	77	95	59	13	77	98	94	39	0.7
	France	w	w	w	w	w	w	w	w	w	w	w	w	w	w	w
	Germany	82	94	40	57	53	82	80	85	57	33	73	95	84	42	0.7
	Greece	40	78	12	61	53	46	97	96	67	34	69	98	96	63	1.0
	Hungary	93	99	54	84	62	84	89	91	65	73	86	94	91	41	0.8
	Iceland	88	89	39	78	77	69	87	96	54	58	87	100	75	26	0.7
	Ireland	88	88	14	64	41	50	88	92	62	78	88	97	97	39	0.9
	Israel	94	99	46	87	85	81	94	89	86	90	94	97	98	26	0.9
	Italy	97	99	39	86	75	87	96	98	88	77	92	98	98	18	0.9
	Japan	43	51	37	30	38	40	29	50	31	37	29	61	60	17	0.9
	Korea	80	85	42	64	68	56	75	69	60	46	63	79	68	7	1 2
	Luxembourg	87	98	32	65	52	64	96	67	74	32	47	98	98	23	1.0
	Mexico	95	97	68	94	89	90	95	91	92	62	90	97	96	43	1.0
	Netherlands	95	97	52	66	73	50	76	82	79	75	80	86	71	16	0.7
	New Zealand	99	98	68	98	73	42	78	84	74	87	97	83	94	12	1.0
	Norway	81	88	24	70	49	55	90	91	48	47	81	98	95	28	0.6
	Poland	94	97	93	95	89	96	91	99	92	71	80	97	93	37	0.8
	Portugal	93	97	9	94	65	49	91	89	48	82	97	99	97	7	0.7
	Slovak Republic	97	99	86	87	86	90	86	98	91	76	96	91	91	15	0.7
	Slovenia	99	100	77	78	85	90	90	95	85	65	93	98	94	23	0.8
	Spain	86	97	28	85	55	45	86	86	66	71	92	99	99	63	0.9
	Sweden	90	96	38	83	63	29	89	90	52	68	93	98	87	13	0.8
	Switzerland	72	82	64	34	60	61	85	80	59	17	54	92	83	31	0.8
	Turkey	85	95	70	93	85	90	75	90	87	78	93	97	99	36	0.9
	United Kingdom	100	100	93	100	92	88	90	96	95	97	99	96	97	29	0.9
	United States	98	98	95	96	94	72	95	97	94	88	90	97	96	16	1.1
	OECD average	88	93	50	75	69	66	86	89	72	61	82	94	90	29	0.9
Partners	Albania	97	100	98	99	94	94	90	88	93	87	93	96	96	47	0.8
	Argentina	95	98	63	90	96	84	94	91	86	66	87	98	96	43	0.9
	Azerbaijan	95	96	97	89	97	99	86	96	99	86	90	90	99	77	1.0
	Brazil	99	99	60	94	94	91	97	97	91	94	94	99	99	44	1.1
	Bulgaria	100	100	92	95	79	93	87	98	94	71	98	91	96	29	0.8
	Colombia	98	99	45	85	92	88	90	96	82	87	92	96	96	31	1 2
	Croatia	94	98	70	80	92	96	96	95	98	76	95	99	100	19	0.8
	Dubai (UAE)	100	100	95	97	98	93	98	99	98	90	93	98	97	39	1 2
	Hong Kong-China	99	99	99	97	100	93	96	98	95	92	97	96	96	45	0.9
	Indonesia	94	99	88	91	99	77	89	96	96	95	96	81	93	47	1.0
	Jordan	99	100	100	99	100	98	99	99	99	81	81	100	99	90	1.1
	Kazakhstan	96	98	98	95	97	97	85	98	99	60	87	86	89	17	0.8
	Kyrgyzstan	90	92	98	90	94	98	89	96	95	82	87	86	81	29	0.9
	Latvia	96	97	80	97	83	86	85	94	85	75	83	76	85	30	0.8
	Liechtenstein	53	21	3	15	14	46	82	16	10	0	13	96	58	44	0.7
	Lithuania	97	98	47	92	75	60	74	89	55	65	89	95	83	7	0.8
	Macao-China	100	100	88	74	82	86	93	76	86	52	88	90	90	45	0.9
	Montenegro	95	100	88	97	97	100	92	100	99	84	100	100	96	23	0.7
	Panama	91	95	86	88	95	84	90	92	95	85	88	97	94	43	1.1
	Peru	94	98	86	88	93	80	80	94	92	84	91	91	95	45	1.1
	Qatar	96	100	100	98	97	94	95	95	98	84	87	96	98	28	1.1
	Romania	98	100	87	98	90	90	96	98	99	91	99	100	99	40	0.8
	Russian Federation	99	99	92	89	87	95	80	99	97	55	97	96	86	31	0.9
	Serbia	97	100	67	90	91	82	97	99	87	93	91	97	97	44	0.8
	Shanghai-China	98	98	94	57	99	69	91	93	96	70	98	99	89	14	0.8
	Singapore	100	100	80	99	94	66	93	93	93	98	98	97	96	8	0.9
	Chinese Taipei	98	98	92	84	86	94	86	98	88	90	95	97	95	20	0.9
	Thailand	94	99	88	98	95	97	94	98	94	96	98	97	97	45	0.9
	Trinidad and Tobago	97	98	60	86	88	71	94	95	84	92	95	97	98	26	1.0
	Tunisia	84	97	92	92	97	60	97	82	84	40	59	99	99	45	1.1
	Uruguay	85	98	89	90	90	81	92	94	84	45	73	98	100	25	1.0



Note: Higher values on the index indicate greater involvement of school principals in school matters.
Source: OECD, *PISA 2009 Database*, Table IV.4.8.

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Figure A.7

Selected characteristics of school systems with reading performance above the OECD average

Four areas	
1. Selecting and grouping students (Figure IV.3.2)	V High vertical differentiation
	v Low vertical differentiation
	H High horizontal differentiation at the system level
	h Medium horizontal differentiation at the system level
	h Low horizontal differentiation at the system level
	Hsc High horizontal differentiation at the school level
	hsc Low horizontal differentiation at the school level
2. Governance of schools (Figure IV.3.5)	A More school autonomy for curriculum and assessment
	a Less school autonomy for curriculum and assessment
	C More school competition
	c Less school competition
3. Assessment and accountability policies (Figure IV.3.6)	B Frequent use of assessment or achievement data for benchmarking and information purposes
	b Infrequent use of assessment or achievement data for benchmarking and information purposes
	D Frequent use of assessment or achievement data for decision making
	d Infrequent use of assessment or achievement data for decision making
4. Resources invested in education (Figure IV.3.7)	E High cumulative expenditure by educational institutions per student aged 6 to 15
	e Low cumulative expenditure by educational institutions per student aged 6 to 15
	S Large class size and high teachers' salaries
	s Small class size and/or low teachers' salaries

	Reading performance (score points)	Strength of relationship between students' socio-economic background and reading performance (% variance explained)		Four areas: 1. Selecting and grouping students (Figure IV.3.2)	2. Governance of schools (Figure IV.3.5)	3. Assessment and accountability policies (Figure IV.3.6)	4. Resources invested in education (Figure IV.3.7)	Countries with similar system characteristics in the four areas
Hong Kong-China	533	Below-average impact of socio-economic background on reading performance	4.5	v + ***h*** + hsc	A + C	B + D	e + S	—
Iceland	500		6.2	v + h + hsc	A + c	B + D	E + s	Australia, Canada, Sweden, United Kingdom, United States
Estonia	501		7.6	v + h + hsc	A + c	B + D	e + s	New Zealand, Poland, Latvia, Lithuania, Russian Federation
Finland	536		7.8	v + h + hsc	A + c	b + d	E + s	—
Japan	520		8.6	v + ***h*** + hsc	A + c	b + D	E + S	—
Canada	524		8.6	v + h + hsc	A + c	B + D	E + s	Australia, Iceland, Sweden, United Kingdom, United States
Norway	503		8.6	v + h + hsc	A + c	B + d	E + s	—
Korea	539		11.0	v + ***h*** + hsc	A + C	B + D	E + S	—
Shanghai-China	556	Average impact of socio-economic background on reading performance	12.3	v + ***h*** + hsc	A + c	B + D	e + S	Thailand
Australia	515		12.7	v + h + hsc	A + C	B + D	E + s	—
Netherlands	508		12.8	V + H + Hsc	A + C	b + d	E + s	—
Switzerland	501		14.1	V + H + Hsc	A + c	b + d	E + s	—
Poland	500		14.8	v + h + hsc	A + c	B + D	e + s	Estonia, New Zealand, Latvia, Lithuania, Russian Federation
Singapore	526		15.3	v + H + hsc	A + c	B + D	e + S	—
New Zealand	521	Above-average impact of socio-economic background on reading performance	16.6	v + h + hsc	A + c	B + D	e + s	Estonia, Poland, Latvia, Lithuania, Russian Federation
Belgium	506		19.3	V + H + hsc	A + C	b + d	E + s	—

Note: Cells shaded in grey are the most prevailing patterns among school systems with above-average reading performance and below-average impact of socio-economic background on reading performance within each of the four areas.
Source: OECD, *PISA 2009 Database,* Tables IV.1.1a and IV.1.1b.
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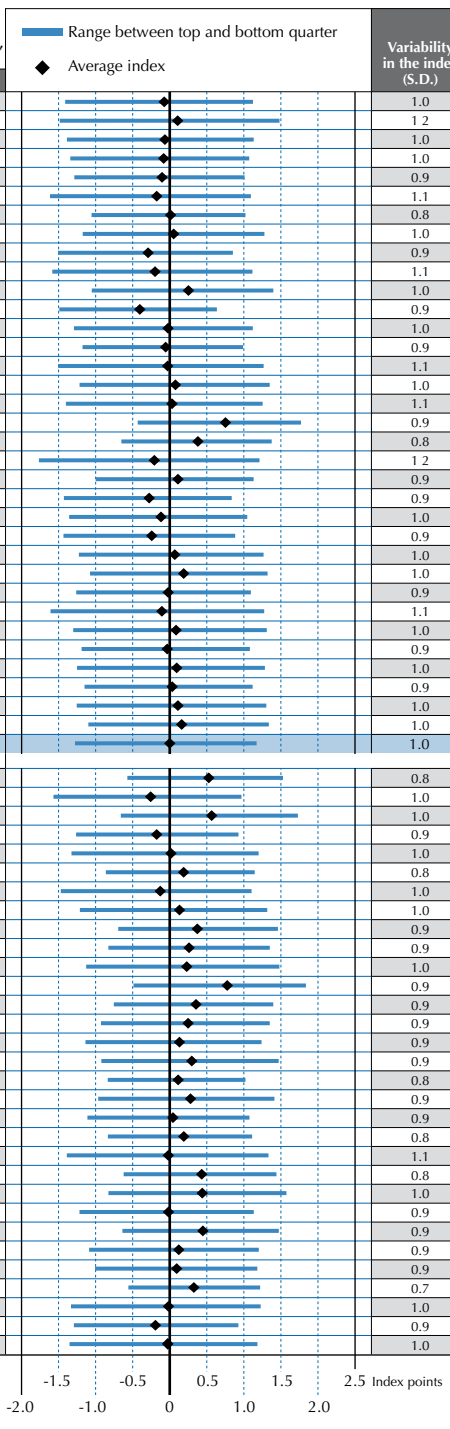
Figure A.8

Students' views of how conducive classrooms are to learning

Index of disciplinary climate based on students' reports

A Students don't listen to what the teacher says.
B There is noise and disorder.
C The teacher has to wait a long time for the students to quieten down.
D Students cannot work well.
E Students don't start working for a long time after the lesson begins.

		Percentage of students reporting that the following phenomena happen "never or hardly ever" or "in some lessons"					Variability in the index (S.D.)	School variability in the distribution of the index (Proportion of the index variance between schools)
		A	B	C	D	E		
OECD	Australia	68	61	71	82	76	1.0	0.12
	Austria	73	74	71	77	70	1 2	0.17
	Belgium	72	63	68	85	71	1.0	0.10
	Canada	71	61	72	82	73	1.0	0.14
	Chile	74	63	65	82	70	0.9	0.13
	Czech Republic	63	66	68	75	70	1.1	0 22
	Denmark	72	65	78	88	82	0.8	0.16
	Estonia	70	69	73	80	78	1.0	0 24
	Finland	60	52	63	80	68	0.9	0.14
	France	64	56	64	76	63	1.1	0.15
	Germany	85	84	78	82	81	1.0	0.13
	Greece	55	58	62	56	65	0.9	0.15
	Hungary	71	71	69	80	78	1.0	0.16
	Iceland	74	67	73	84	81	0.9	0.12
	Ireland	64	65	70	81	75	1.1	0.10
	Israel	78	75	73	77	74	1.0	0.19
	Italy	66	68	70	81	74	1.1	0 23
	Japan	92	90	93	87	91	0.9	0 27
	Korea	90	77	88	90	87	0.8	0.08
	Luxembourg	60	65	64	71	64	1 2	0.05
	Mexico	79	73	79	83	77	0.9	0.12
	Netherlands	68	59	63	81	55	0.9	0.08
	New Zealand	68	61	68	82	74	1.0	0.09
	Norway	67	61	66	77	67	0.9	0.17
	Poland	67	74	74	79	80	1.0	0.17
	Portugal	78	76	80	86	79	1.0	0.10
	Slovak Republic	67	74	73	81	75	0.9	0.16
	Slovenia	59	66	68	78	70	1.1	0 23
	Spain	73	74	73	83	73	1.0	0.14
	Sweden	75	67	71	83	76	0.9	0.18
	Switzerland	72	74	74	81	76	1.0	0.10
	Turkey	86	77	74	77	78	0.9	0.08
	United Kingdom	73	68	74	86	81	1.0	0.14
	United States	76	72	79	87	82	1.0	0.14
	OECD average	71	68	72	81	75	1.0	0.15
Partners	Albania	89	88	86	87	88	0.8	0.13
	Argentina	67	57	62	74	66	1.0	0.17
	Azerbaijan	90	90	88	87	86	1.0	0.12
	Brazil	75	60	67	76	63	0.9	0.12
	Bulgaria	69	72	73	75	77	1.0	0.09
	Colombia	82	78	81	88	77	0.8	0.11
	Croatia	59	68	69	75	73	1.0	0.14
	Dubai (UAE)	77	72	73	83	77	1.0	0.17
	Hong Kong-China	87	88	89	88	86	0.9	0.08
	Indonesia	84	75	79	84	84	0.9	0.12
	Jordan	81	75	74	76	74	1.0	0.14
	Kazakhstan	88	93	91	88	92	0.9	0.17
	Kyrgyzstan	86	88	84	82	86	0.9	0.05
	Latvia	78	78	79	86	86	0.9	0 21
	Liechtenstein	71	81	76	79	80	0.9	0.14
	Lithuania	78	82	84	84	84	0.9	0.13
	Macao-China	80	86	84	85	80	0.8	0.12
	Montenegro	72	82	80	82	81	0.9	0.08
	Panama	77	73	75	81	76	0.9	0.07
	Peru	83	77	85	85	82	0.8	0.06
	Qatar	72	68	66	73	70	1.1	0.09
	Romania	89	89	89	89	87	0.8	0.13
	Russian Federation	81	86	85	85	89	1.0	0.14
	Serbia	63	74	74	79	75	0.9	0.14
	Shanghai-China	85	88	90	87	89	0.9	0.18
	Singapore	78	70	77	87	83	0.9	0.07
	Chinese Taipei	78	81	80	84	78	0.9	0.08
	Thailand	91	85	86	91	91	0.7	0.07
	Trinidad and Tobago	71	69	66	81	75	1.0	0.09
	Tunisia	76	62	66	69	65	0.9	0.06
	Uruguay	74	67	69	80	74	1.0	0.13



Note: Higher values on the index indicate a better disciplinary climate.
Source: OECD, *PISA 2009 Database*, Table IV.4.2.

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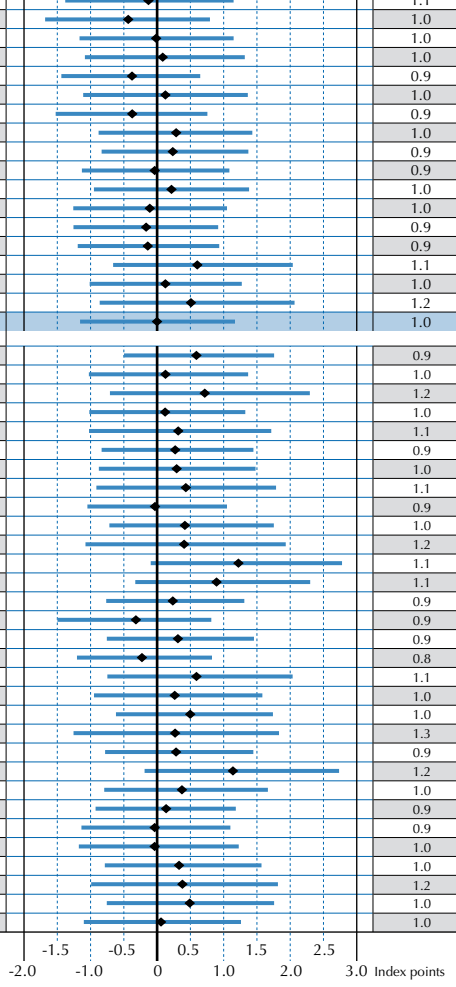
Figure A.9

Students' views of how well teachers motivate them to read

Index of teachers' stimulation of students' reading engagement based on students' reports

- A The teacher asks students to explain the meaning of a text.
- B The teacher asks questions that challenge students to get a better understanding of a text.
- C The teacher gives students enough time to think about their answers.
- D The teacher recommends a book or author to read.
- E The teacher encourages students to express their opinion about a text.
- F The teacher helps students relate the stories they read to their lives.
- G The teacher shows students how the information in texts builds on what they already know.

		Percentage of students reporting that the following phenomena occur "never or hardly ever" or "in some lessons"							Range between top and bottom quarter / Average index	Variability in the index (S.D.)	School variability in the distribution of the index (Proportion of the index variance between schools)
		A	B	C	D	E	F	G			
OECD	Australia	63	67	68	30	63	32	50		1.0	0.07
	Austria	39	42	55	30	54	26	38		1.0	0.07
	Belgium	43	56	65	24	51	27	34		0.9	0.05
	Canada	61	65	68	37	65	44	53		1.0	0.10
	Chile	48	59	59	49	57	43	57		1.0	0.09
	Czech Republic	46	54	58	43	49	23	33		0.9	0.07
	Denmark	76	80	60	30	58	45	50		0.9	0.07
	Estonia	49	67	63	45	59	29	40		0.8	0.08
	Finland	35	35	63	38	47	17	24		0.8	0.07
	France	62	60	69	43	58	27	47		0.9	0.06
	Germany	50	53	61	19	58	26	44		0.9	0.04
	Greece	65	75	45	26	60	33	40		0.9	0.07
	Hungary	56	64	71	38	63	45	52		0.9	0.10
	Iceland	30	44	53	25	38	32	36		1.0	0.09
	Ireland	59	67	63	30	63	29	46		1.0	0.04
	Israel	41	46	55	26	45	31	36		1.2	0.15
	Italy	48	61	63	47	60	32	35		0.9	0.10
	Japan	55	66	61	25	42	30	29		1.1	0.08
	Korea	38	45	46	19	26	32	33		1.0	0.05
	Luxembourg	58	60	56	36	55	28	42		1.0	0.01
	Mexico	42	60	44	54	58	37	45		1.0	0.07
	Netherlands	35	49	61	29	36	18	35		0.9	0.05
	New Zealand	62	65	65	34	61	33	50		1.0	0.04
	Norway	45	53	47	28	41	20	28		0.9	0.08
	Poland	66	73	60	48	67	45	55		1.0	0.06
	Portugal	64	49	68	46	63	37	51		0.9	0.03
	Slovak Republic	44	60	57	35	52	38	39		0.9	0.09
	Slovenia	63	68	62	41	65	46	48		1.0	0.07
	Spain	41	49	53	48	53	27	40		1.0	0.09
	Sweden	34	41	58	44	56	30	35		0.9	0.07
	Switzerland	45	45	61	27	56	32	41		0.9	0.05
	Turkey	71	75	70	59	67	51	53		1.1	0.06
	United Kingdom	67	63	68	26	65	30	55		1.0	0.07
	United States	69	73	70	43	66	51	59		1.2	0.07
	OECD average	52	59	60	36	55	33	43		1.0	0.07
Partners	Albania	59	80	68	51	73	60	61		0.9	0.06
	Argentina	45	61	64	49	58	34	43		1.0	0.08
	Azerbaijan	52	80	66	64	75	56	64		1.2	0.10
	Brazil	38	44	61	55	61	41	51		1.0	0.04
	Bulgaria	52	70	67	52	61	43	55		1.1	0.04
	Colombia	48	62	53	57	62	51	51		0.9	0.09
	Croatia	64	69	61	43	68	50	47		1.0	0.05
	Dubai (UAE)	63	72	68	41	67	49	57		1.1	0.06
	Hong Kong-China	55	64	60	22	44	35	38		0.9	0.09
	Indonesia	44	69	72	44	56	46	49		1.0	0.07
	Jordan	61	62	65	49	66	54	58		1.2	0.08
	Kazakhstan	80	87	81	78	82	75	74		1.1	0.11
	Kyrgyzstan	70	84	74	68	72	70	68		1.1	0.09
	Latvia	52	72	62	43	71	40	51		0.9	0.10
	Liechtenstein	36	38	55	31	48	29	39		0.9	0.18
	Lithuania	61	72	64	55	68	38	51		0.9	0.04
	Macao-China	49	54	43	17	37	30	31		0.8	0.06
	Montenegro	71	73	67	54	68	65	66		1.1	0.07
	Panama	40	58	60	50	62	49	53		1.0	0.04
	Peru	63	66	56	63	71	55	58		1.0	0.06
	Qatar	53	64	60	45	60	49	56		1.3	0.06
	Romania	50	49	56	63	66	43	47		0.9	0.05
	Russian Federation	83	86	80	79	84	74	75		1.2	0.08
	Serbia	68	74	61	47	67	45	51		1.0	0.05
	Shanghai-China	63	47	68	29	59	46	50		0.9	0.04
	Singapore	51	57	68	22	49	36	45		0.9	0.05
	Chinese Taipei	37	48	44	39	41	48	48		1.0	0.03
	Thailand	39	51	54	47	64	58	60		1.0	0.07
	Trinidad and Tobago	60	70	67	40	63	47	59		1.2	0.05
	Tunisia	62	58	65	65	69	47	55		1.0	0.06
	Uruguay	56	57	55	43	55	31	45		1.0	0.04



Note: Higher values on the index indicate higher teacher stimulation of reading engagement.

Source: OECD, *PISA 2009 Database*, Table IV.4.3.

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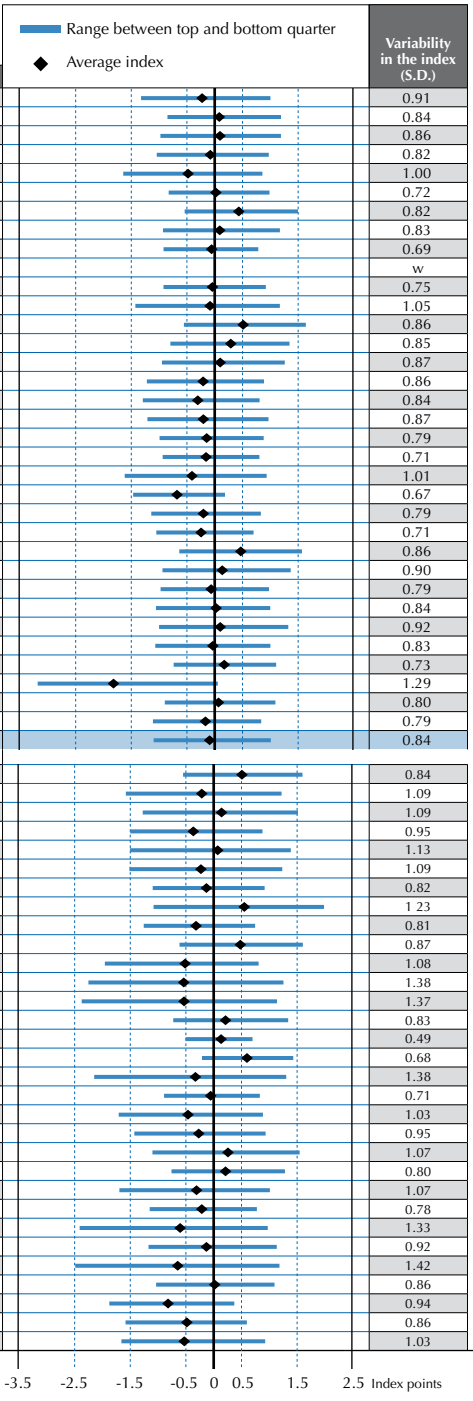
Figure A.10

School principals' views of how teacher behaviour affects students' learning

Index of teacher-related factors affecting school climate based on school principals' reports

- A Teachers' low expectations of students
- B Poor student-teacher relations
- C Teachers not meeting individual students' needs
- D Teacher absenteeism
- E Staff resisting change
- F Teachers being too strict with students
- G Students not being encouraged to achieve their full potential

		Percentage of students in schools whose principals reported that the following phenomena hindered learning "not at all" or "very little"							Variability in the index (S.D.)
		A	B	C	D	E	F	G	
OECD	Australia	68	85	58	86	61	96	78	0.91
	Austria	86	94	78	78	76	97	87	0.84
	Belgium	87	96	76	75	71	96	84	0.86
	Canada	86	89	75	88	62	94	86	0.82
	Chile	51	92	62	69	60	86	57	1.00
	Czech Republic	83	83	94	96	86	90	75	0.72
	Denmark	95	97	88	89	91	98	93	0.82
	Estonia	82	87	68	89	87	82	77	0.83
	Finland	94	88	67	80	84	97	86	0.69
	France	w	w	w	w	w	w	w	w
	Germany	82	93	77	78	70	96	89	0.75
	Greece	64	82	70	86	76	89	76	1.05
	Hungary	94	96	94	94	90	89	69	0.86
	Iceland	90	88	71	83	84	97	92	0.85
	Ireland	78	92	76	88	82	89	84	0.87
	Israel	73	86	67	71	80	90	80	0.86
	Italy	74	73	73	91	48	85	67	0.84
	Japan	76	85	71	97	63	81	61	0.87
	Korea	66	90	67	99	66	84	83	0.79
	Luxembourg	95	88	64	82	84	89	71	0.71
	Mexico	65	81	69	78	59	80	60	1.01
	Netherlands	66	90	44	62	61	86	45	0.67
	New Zealand	63	83	57	95	73	95	82	0.79
	Norway	80	90	52	75	79	98	77	0.71
	Poland	90	98	89	77	85	98	91	0.86
	Portugal	74	96	77	98	67	100	79	0.90
	Slovak Republic	87	94	88	80	79	75	78	0.79
	Slovenia	83	90	78	85	68	87	81	0.84
	Spain	75	91	85	91	67	92	74	0.92
	Sweden	77	93	64	87	67	99	75	0.83
	Switzerland	94	91	81	96	74	97	89	0.73
	Turkey	28	25	39	30	25	32	27	1.29
	United Kingdom	79	97	77	87	83	98	92	0.80
	United States	77	90	72	91	68	96	84	0.79
	OECD average	78	88	72	83	72	90	77	0.84
Partners	Albania	86	91	91	96	93	97	81	0.84
	Argentina	70	88	73	51	62	87	55	1.09
	Azerbaijan	67	67	80	82	81	91	76	1.09
	Brazil	56	89	58	70	64	92	65	0.95
	Bulgaria	73	84	70	73	87	88	72	1.13
	Colombia	66	93	66	79	49	81	63	1.09
	Croatia	79	90	75	94	58	90	72	0.82
	Dubai (UAE)	86	89	80	86	77	87	92	1 23
	Hong Kong-China	58	93	52	87	77	94	69	0.81
	Indonesia	86	96	90	97	90	92	69	0.87
	Jordan	60	62	64	58	61	86	69	1.08
	Kazakhstan	43	60	55	60	66	60	58	1.38
	Kyrgyzstan	54	71	69	66	64	65	59	1.37
	Latvia	90	93	81	91	93	89	77	0.83
	Liechtenstein	94	100	80	100	83	100	100	0.49
	Lithuania	94	99	93	98	96	99	96	0.68
	Macao-China	73	73	44	66	66	83	57	1.38
	Montenegro	85	95	73	88	88	93	58	0.71
	Panama	62	89	69	75	57	81	61	1.03
	Peru	64	91	72	85	69	83	63	0.95
	Qatar	77	80	82	88	84	88	85	1.07
	Romania	84	90	89	99	69	91	83	0.80
	Russian Federation	60	79	68	78	65	56	58	1.07
	Serbia	71	94	70	93	59	84	61	0.78
	Shanghai-China	58	59	45	71	60	73	47	1.33
	Singapore	64	83	59	84	83	90	90	0.92
	Chinese Taipei	52	57	54	70	56	67	52	1.42
	Thailand	67	82	72	90	90	68	87	0.86
	Trinidad and Tobago	45	66	34	41	54	91	71	0.94
	Tunisia	33	83	69	40	73	83	74	0.86
	Uruguay	53	92	68	35	57	94	33	1.03



Note: Higher values on the index indicate a positive teacher behaviour.
Source: OECD, *PISA 2009 Database*, Table IV.4.5.

StatLink http://dx.doi.org/10.1787/888932343418

Figure A.11

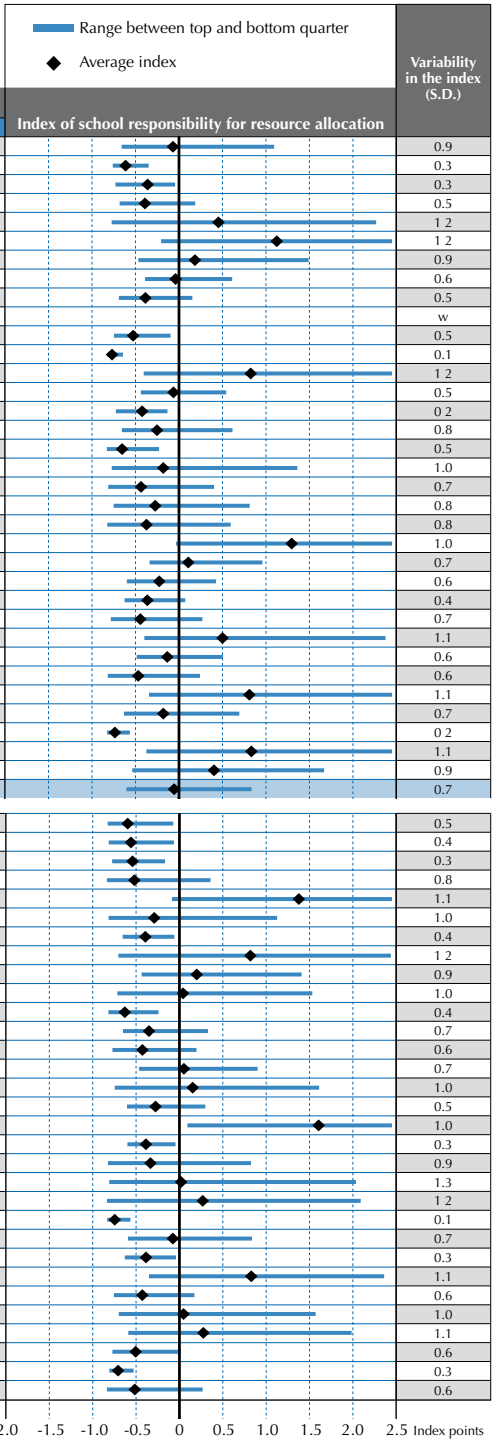
How much autonomy individual schools have over resource allocation

Percentage of students in schools whose principals reported that only "principals and/or teachers", only "regional and/or national education authority" or both "principals and/or teachers" and "regional and/or national education authority" have a considerable responsibility for the following tasks

A Selecting teachers for hire
B Dismissing teachers
C Establishing teachers' starting salaries
D Determining teachers' salaries increases
E Formulating the school budget
F Deciding on budget allocations within the school

1 Only "principals and/or teachers"
2 Both "principals and/or teachers" and "regional and/or national education authority"
3 Only "regional and/or national education authority"

	A			B			C			D			E			F			Variability in the index (S.D.)
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	
OECD Australia	61	20	19	43	12	45	12	5	84	13	6	81	68	16	16	93	6	0	0.9
Austria	13	35	52	5	26	68	1	0	99	1	0	99	11	9	80	84	12	4	0.3
Belgium	75	13	12	63	21	17	0	1	99	0	1	99	56	18	26	63	19	17	0.3
Canada	54	39	7	17	35	48	3	5	92	4	6	91	25	30	45	76	19	5	0.5
Chile	69	8	23	59	3	38	37	1	62	37	1	62	55	9	36	71	9	20	1 2
Czech Republic	100	0	0	99	1	0	77	15	8	65	25	11	55	36	9	75	24	1	1 2
Denmark	97	2	0	69	15	16	20	10	70	16	14	70	80	13	8	98	2	0	0.9
Estonia	98	2	0	95	5	0	7	20	73	12	33	55	37	54	9	85	15	1	0.6
Finland	32	43	25	18	19	63	8	7	84	5	15	80	36	41	23	92	6	1	0.5
France	w	w	w	w	w	w	w	w	w	w	w	w	w	w	w	w	w	w	w
Germany	29	36	34	7	14	79	3	0	97	4	15	81	29	4	67	97	2	2	0.5
Greece	0	1	99	0	2	98	0	0	100	0	0	100	34	7	59	59	7	34	0.1
Hungary	99	1	0	97	2	1	49	7	44	56	7	37	73	15	12	92	5	2	1 2
Iceland	94	6	0	93	7	0	7	13	80	4	16	80	57	30	13	77	22	0	0.5
Ireland	61	25	14	36	14	50	0	2	98	1	0	99	60	13	27	89	5	6	0 2
Israel	67	30	3	49	38	13	9	4	87	13	6	80	15	26	59	66	24	11	0.8
Italy	9	10	82	9	6	84	3	0	97	3	0	96	7	7	86	69	11	21	0.5
Japan	25	2	73	22	1	77	13	0	87	16	3	80	28	4	69	89	3	8	1.0
Korea	32	6	62	23	4	74	8	0	92	6	0	94	29	12	58	86	6	8	0.7
Luxembourg	21	41	38	19	36	45	6	0	94	6	0	94	31	57	12	78	14	8	0.8
Mexico	34	5	61	22	4	73	8	0	92	6	0	94	46	6	48	71	7	22	0.8
Netherlands	100	0	0	99	1	0	72	8	20	55	12	33	99	1	0	100	0	0	1.0
New Zealand	100	0	0	89	7	4	9	3	88	15	21	64	95	4	1	99	1	0	0.7
Norway	72	21	6	44	22	34	8	4	88	6	13	81	55	28	17	88	12	1	0.6
Poland	87	12	1	90	10	0	9	20	71	4	20	77	7	42	51	26	43	31	0.4
Portugal	13	57	30	14	0	86	5	0	94	5	0	94	63	10	27	89	3	8	0.7
Slovak Republic	98	2	0	98	2	0	39	27	34	32	33	35	45	40	15	70	27	3	1.1
Slovenia	96	4	1	88	10	1	7	11	82	13	31	56	26	49	26	78	21	1	0.6
Spain	31	3	66	32	1	67	3	2	95	3	2	95	63	4	33	93	4	3	0.6
Sweden	96	4	0	63	17	20	57	16	27	69	22	9	64	20	16	93	5	2	1.1
Switzerland	82	15	3	60	26	15	8	8	84	8	13	79	35	30	35	83	13	4	0.7
Turkey	1	1	99	2	2	96	1	0	99	1	0	99	34	19	47	56	16	28	0 2
United Kingdom	90	9	0	70	22	8	52	23	25	67	17	15	57	29	14	95	5	1	1.1
United States	88	12	0	75	19	6	17	5	78	18	6	75	54	29	16	83	13	4	0.9
OECD average	61	14	25	51	13	37	17	7	77	17	10	73	46	22	32	81	12	8	0.7
Partners Albania	8	14	78	7	14	79	3	0	97	3	1	96	33	12	55	61	8	31	0.5
Argentina	44	5	51	27	3	70	2	1	97	1	4	96	22	5	73	64	12	24	0.4
Azerbaijan	40	22	38	61	17	22	35	6	59	13	3	84	5	6	89	20	4	76	0.3
Brazil	17	7	76	14	8	78	8	1	91	7	1	92	14	5	80	21	6	73	0.8
Bulgaria	93	5	2	97	2	1	66	20	14	84	12	4	73	22	5	92	7	1	1.1
Colombia	21	5	75	21	1	78	14	0	86	13	1	86	58	5	36	87	5	8	1.0
Croatia	90	10	0	84	11	5	1	1	98	2	1	97	26	34	40	68	23	9	0.4
Dubai (UAE)	65	12	23	67	9	24	62	3	34	68	1	31	75	2	22	92	3	5	1 2
Hong Kong-China	83	15	2	79	17	4	18	24	58	15	12	74	84	15	2	91	9	0	0.9
Indonesia	29	12	59	26	11	63	20	9	70	23	11	66	83	11	5	78	14	8	1.0
Jordan	6	1	93	4	1	95	1	1	98	2	0	98	83	1	17	70	2	28	0.4
Kazakhstan	88	10	2	95	4	2	17	10	73	8	10	82	8	13	79	17	19	64	0.7
Kyrgyzstan	74	14	11	68	13	19	18	4	77	13	3	84	12	7	81	19	7	74	0.6
Latvia	94	4	2	96	4	0	10	15	75	18	25	57	62	25	12	81	16	3	0.7
Liechtenstein	41	0	59	37	0	63	6	0	94	39	17	45	37	0	63	100	0	0	1.0
Lithuania	96	4	0	99	1	0	11	7	81	6	8	86	25	27	48	42	29	28	0.5
Macao-China	92	4	4	91	5	4	91	4	5	90	4	5	95	5	0	84	16	0	1.0
Montenegro	89	11	0	82	18	0	0	5	95	10	11	78	12	21	68	65	22	13	0.3
Panama	22	3	76	20	8	72	14	5	81	14	8	79	70	15	15	43	10	47	0.9
Peru	38	15	47	30	9	61	22	2	76	22	2	77	60	9	31	79	6	15	1.3
Qatar	52	3	44	54	5	41	47	3	50	47	4	50	43	4	53	52	4	44	1 2
Romania	1	9	91	4	11	86	0	2	97	1	4	95	7	25	68	40	13	47	0.1
Russian Federation	95	4	1	95	5	0	35	15	50	29	20	51	8	30	63	46	28	27	0.7
Serbia	72	28	1	64	30	7	1	8	90	16	19	65	9	27	64	74	16	10	0.3
Shanghai-China	98	2	0	99	1	0	36	5	59	43	6	51	91	2	6	98	1	1	1.1
Singapore	14	38	48	14	24	62	4	3	93	7	17	75	49	22	29	91	8	1	0.6
Chinese Taipei	73	13	14	74	14	12	18	7	75	23	7	70	50	13	37	78	8	14	1.0
Thailand	30	20	50	59	12	28	29	14	56	72	24	5	70	20	10	90	7	2	1.1
Trinidad and Tobago	17	14	69	6	4	90	2	1	96	6	5	89	46	28	26	75	12	12	0.6
Tunisia	2	0	98	1	0	99	1	1	99	1	0	99	10	18	72	78	13	9	0.3
Uruguay	17	5	78	13	1	86	3	1	96	2	1	96	13	12	75	49	16	35	0.6



Source: OECD, *PISA 2009 Database*, Table IV.3.5.

StatLink http://dx.doi.org/10.1787/888932366636

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Figure A.12

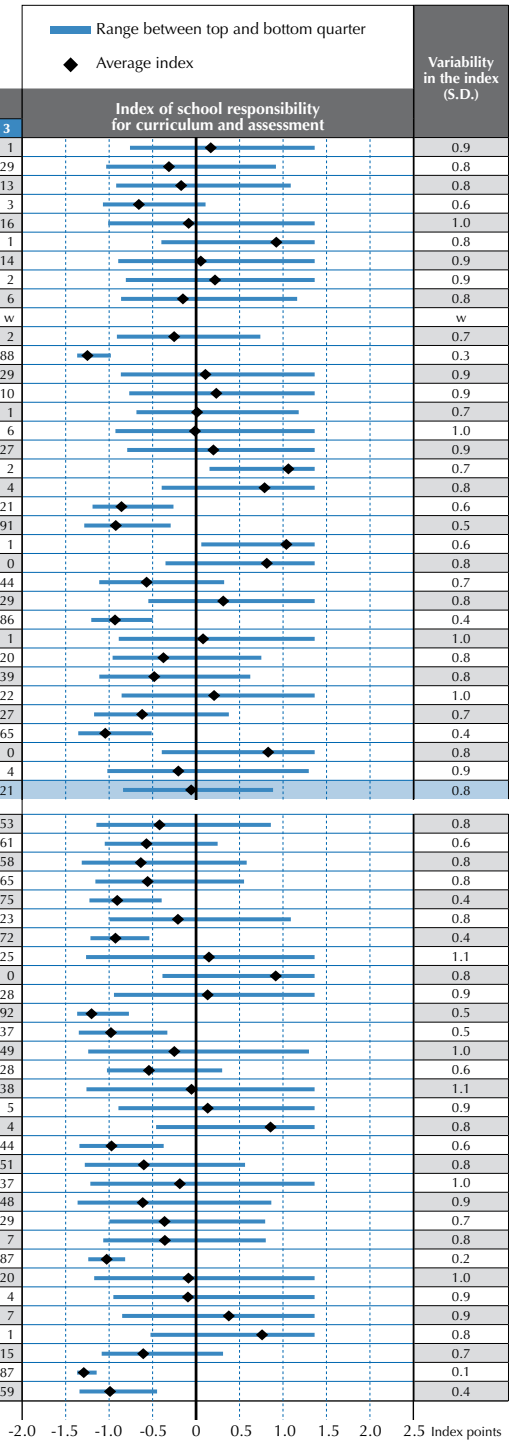
How much autonomy individual schools have over curricula and assessments

Percentage of students in schools whose principals reported that only "principals and/or teachers", only "regional and/or national education authority" or both "principals and/or teachers" and "regional and/or national education authority" have a considerable responsibility for the following tasks

A Establishing student assessment policies
B Choosing which textbooks are used
C Determining course content
D Deciding which courses are offered

1 Only "principals and/or teachers"
2 Both "principals and/or teachers" and "regional and/or national education authority"
3 Only "regional and/or national education authority"

	A			B			C			D			Index of school responsibility for curriculum and assessment	Variability in the index (S.D.)
	1	2	3	1	2	3	1	2	3	1	2	3		
OECD Australia	65	33	2	92	8	0	46	40	14	75	24	1		0.9
Austria	57	27	15	94	5	1	37	40	23	32	40	29		0.8
Belgium	78	19	4	94	4	1	32	42	26	40	46	13		0.8
Canada	28	62	10	40	49	11	12	51	38	44	54	3		0.6
Chile	72	21	6	73	20	7	43	22	35	64	20	16		1.0
Czech Republic	95	5	0	89	11	1	83	16	1	88	11	1		0.8
Denmark	61	28	11	100	0	0	56	32	12	47	39	14		0.9
Estonia	63	33	3	66	32	2	66	30	4	79	20	2		0.9
Finland	50	43	7	98	2	0	32	52	16	55	39	6		0.8
France	w	w	w	w	w	w	w	w	w	w	w	w		w
Germany	71	21	9	84	13	3	21	47	32	80	18	2		0.7
Greece	20	12	68	7	8	85	1	3	96	6	5	88		0.3
Hungary	94	6	0	98	2	0	49	36	15	43	28	29		0.9
Iceland	92	8	1	93	4	3	61	26	13	48	42	10		0.9
Ireland	87	13	0	97	3	0	29	37	34	78	21	1		0.7
Israel	80	20	0	53	43	4	52	44	5	44	50	6		1.0
Italy	91	8	1	99	1	0	59	27	14	49	25	27		0.9
Japan	98	2	0	89	8	3	93	6	1	94	5	2		0.7
Korea	92	6	2	96	4	0	89	8	2	79	17	4		0.8
Luxembourg	9	33	58	13	80	7	9	72	20	18	61	21		0.6
Mexico	56	15	29	63	11	26	14	7	79	5	5	91		0.5
Netherlands	99	1	0	100	0	0	87	12	1	89	10	1		0.6
New Zealand	81	17	2	99	1	0	79	20	1	92	8	0		0.8
Norway	38	36	27	97	2	1	30	40	30	23	33	44		0.7
Poland	92	8	0	92	8	0	93	7	0	40	31	29		0.8
Portugal	35	37	28	98	2	0	5	3	92	10	5	86		0.4
Slovak Republic	76	21	3	56	39	5	48	47	5	52	48	1		1.0
Slovenia	46	48	5	72	27	1	34	59	6	28	52	20		0.8
Spain	44	34	23	95	5	0	32	31	37	30	31	39		0.8
Sweden	66	30	3	99	1	0	66	26	8	53	25	22		1.0
Switzerland	57	27	16	40	40	20	21	41	38	24	50	27		0.7
Turkey	42	29	30	14	18	68	9	15	76	14	21	65		0.4
United Kingdom	88	12	0	98	2	0	77	20	2	86	14	0		0.8
United States	46	40	13	62	28	10	36	46	18	58	37	4		0.9
OECD average	66	23	11	78	15	8	45	31	24	50	28	21		0.8
Partners Albania	51	16	33	91	8	1	35	7	57	35	12	53		0.8
Argentina	74	20	6	81	16	3	28	43	29	8	30	61		0.6
Azerbaijan	54	8	38	50	6	43	27	9	64	37	5	58		0.8
Brazil	47	27	26	88	9	2	35	25	40	18	17	65		0.8
Bulgaria	25	37	38	88	12	1	10	26	65	10	15	75		0.4
Colombia	39	21	39	92	3	4	69	23	8	64	14	23		0.8
Croatia	26	36	38	63	34	3	11	50	39	2	25	72		0.4
Dubai (UAE)	77	10	13	55	17	27	62	13	26	59	16	25		1.1
Hong Kong-China	93	7	0	93	7	0	81	17	2	87	13	0		0.8
Indonesia	67	28	6	80	13	7	75	18	7	49	23	28		0.9
Jordan	27	4	70	4	1	95	7	1	93	7	1	92		0.5
Kazakhstan	31	22	47	16	14	70	11	18	71	40	22	37		0.5
Kyrgyzstan	65	8	26	68	8	23	59	10	31	44	7	49		1.0
Latvia	56	40	4	71	27	2	19	46	36	30	42	28		0.6
Liechtenstein	69	25	6	54	5	40	41	0	59	53	9	38		1.1
Lithuania	75	20	5	89	11	1	50	35	15	75	20	5		0.9
Macao-China	95	0	5	100	0	0	94	6	0	81	14	4		0.8
Montenegro	40	32	28	5	30	65	5	34	61	20	36	44		0.6
Panama	41	25	34	52	26	22	41	23	36	26	23	51		0.8
Peru	75	15	10	52	12	37	53	23	24	45	18	37		1.0
Qatar	45	18	37	37	16	47	31	9	60	35	17	48		0.9
Romania	42	36	22	86	13	1	46	33	20	31	41	29		0.7
Russian Federation	63	25	12	65	27	8	21	40	39	71	22	7		0.8
Serbia	49	44	7	19	59	23	2	41	57	0	12	87		0.2
Shanghai-China	86	9	5	49	17	34	45	22	33	52	28	20		1.0
Singapore	57	41	2	72	24	3	44	38	18	66	31	4		0.9
Chinese Taipei	74	17	8	92	8	0	81	16	3	68	25	7		0.9
Thailand	79	18	2	89	10	1	89	11	0	91	8	1		0.8
Trinidad and Tobago	50	45	5	29	62	10	21	40	39	34	51	15		0.7
Tunisia	11	11	78	0	1	99	3	14	83	4	9	87		0.1
Uruguay	23	30	47	31	36	33	3	26	71	21	19	59		0.4



Source: OECD, *PISA 2009 Database*, Table IV.3.6.

StatLink http://dx.doi.org/10.1787/888932366636



Table A.1

Average class size, by type of institution and level of education (2008)

Calculations based on number of students and number of classes

		Primary education					Lower secondary education (general programmes)				
			Private institutions					Private institutions			
		Public institutions	Total private institutions	Government-dependent private institutions	Independent private institutions	Total: Public and private institutions	Public institutions	Total private institutions	Government-dependent private institutions	Independent private institutions	Total: Public and private institutions
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
OECD countries	Australia	23.2	24.9	24.9	a	**23.7**	23.0	24.7	24.7	a	**23.6**
	Austria	19.3	20.6	x(2)	x(2)	**19.3**	23.3	24.0	x(7)	x(7)	**23.4**
	Belgium	m	m	m	m	**m**	m	m	m	m	**m**
	Belgium (Fr.)	19.7	20.8	20.8	a	**20.2**	m	m	m	a	**m**
	Canada	m	m	m	m	**m**	m	m	m	m	**m**
	Chile	28.8	31.6	33.3	23.8	**30.3**	29.5	31.6	33.0	24.6	**30.5**
	Czech Republic	20.0	16.2	16.2	a	**19.9**	22.5	20.3	20.3	a	**22.5**
	Denmark	20.0	16.8	16.8	a	**19.6**	20.4	18.1	18.1	a	**20.0**
	Finland	19.8	18.4	18.4	a	**19.8**	20.0	21.7	21.7	a	**20.1**
	France	22.7	23.1	x(2)	x(2)	**22.7**	24.1	25.1	25.3	13.3	**24.3**
	Germany	21.9	22.4	22.4	x(3)	**21.9**	24.7	25.5	25.5	x(8)	**24.7**
	Greece	16.6	20.4	a	20.4	**16.8**	21.7	25.6	a	25.6	**21.9**
	Hungary	21.4	19.3	19.3	a	**21.2**	22.8	21.3	21.3	a	**22.6**
	Iceland	18.0	14.4	14.4	n	**17.9**	19.8	13.0	13.0	n	**19.7**
	Ireland	24.3	m	a	m	**m**	m	m	a	m	**m**
	Italy	18.6	20.1	a	20.1	**18.7**	20.9	22.0	a	22.0	**21.0**
	Japan	28.0	32.8	a	32.8	**28.1**	33.0	35.5	a	35.5	**33.2**
	Korea	29.9	30.9	a	30.9	**30.0**	35.5	34.4	34.4	a	**35.3**
	Luxembourg	15.6	18.1	20.1	18.0	**15.7**	19.5	21.2	20.9	21.6	**19.8**
	Mexico	19.7	20.7	a	20.7	**19.8**	29.1	24.9	a	24.9	**28.7**
	Netherlands[1]	22.4	m	a	m	**m**	m	m	a	m	**m**
	New Zealand	m	m	m	m	**m**	m	m	m	m	**m**
	Norway	a	a	a	a	**a**	a	a	a	a	**a**
	Poland	19.3	12.7	14.4	12.1	**19.0**	24.0	18.1	25.1	16.3	**23.2**
	Portugal	18.6	20.1	24.3	19.1	**18.8**	22.2	23.4	23.6	23.0	**22.3**
	Slovak Republic	19.4	18.3	18.3	n	**19.3**	22.0	21.1	21.1	n	**22.0**
	Spain	19.7	24.4	24.3	24.8	**21.0**	23.6	26.2	26.3	24.9	**24.4**
	Sweden	m	m	m	m	**m**	m	m	m	m	**m**
	Switzerland	19.5	m	m	m	**m**	18.9	m	m	m	**m**
	Turkey	27.3	18.0	a	18.0	**27.0**	a	a	a	a	**a**
	United Kingdom	25.7	13.6	25.7	13.5	**24.6**	21.3	12.8	21.3	11.2	**20.4**
	United States	23.8	19.3	a	19.3	**23.3**	23.2	19.1	a	19.1	**22.8**
	OECD average	**21.6**	**20.8**	**20.9**	**21.0**	**21.6**	**23.7**	**23.2**	**23.5**	**21.8**	**23.9**
	EU19 average	**20.3**	**19.1**	**20.1**	**18.3**	**19.9**	**22.2**	**21.8**	**22.5**	**19.7**	**22.2**
Partner countries	Brazil	27.1	17.8	a	17.8	**25.5**	30.5	25.0	a	25.0	**29.8**
	China	36.6	41.8	x(2)	x(2)	**36.8**	55.5	51.6	x(7)	x(7)	**55.2**
	Estonia	18.4	15.1	a	15.1	**18.3**	21.6	15.6	a	15.6	**21.4**
	India	m	m	m	m	**m**	m	m	m	m	**m**
	Indonesia	27.4	22.8	a	22.8	**26.6**	37.7	33.1	a	33.1	**35.9**
	Israel	27.6	a	a	a	**27.6**	32.5	a	a	a	**32.5**
	Russian Federation	15.8	10.4	a	10.4	**15.7**	17.9	9.8	a	9.8	**17.8**
	Slovenia	18.5	17.0	17.0	n	**18.5**	20.4	23.5	23.5	n	**20.4**

1. Year of reference 2006.

Source: *Education at a Glance 2010: OECD Indicators,* OECD Publishing. India, Indonesia: UNESCO Institute for Statistics (World Education Indicators Programme). China: Based on the *Educational Statistics Yearbook* in China 2008. See Annex 3 for notes *(www.oecd.org/edu/eag2010)*.

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Table A.2

Ratio of students to teaching staff in educational institutions (2008)

By level of education, calculations based on full-time equivalents

		Pre-primary education		Primary education	Secondary education			Post-secondary non-tertiary education	Tertiary education		
		Students to contact staff (teachers and teacher aides)	Students to teaching staff		Lower secondary education	Upper secondary education	All secondary education		Tertiary-type B	Tertiary-type A and advanced research programmes	All tertiary education
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
OECD countries	Australia[1, 2]	m	m	15.8	x(6)	x(6)	12.0	m	m	15.2	m
	Austria	12.0	16.3	12.9	9.9	10.5	10.2	10.6	x(10)	x(10)	14.6
	Belgium[3]	15.9	15.9	12.6	8.1	10.8	9.9	x(5)	x(10)	x(10)	19.0
	Canada[2]	m	x(6)	x(6)	x(6)	x(6)	16.3	m	m	m	m
	Chile	11.9	13.7	24.1	24.1	25.2	24.8	a	74.2	21.6	30.0
	Czech Republic	13.5	13.7	18.1	11.8	12.2	12.0	18.2	16.2	19.4	19.1
	Denmark	m	6.2	x(4)	10.1	m	m	m	m	m	m
	Finland	m	11.4	14.4	10.6	15.9	13.6	x(5)	n	15.8	15.8
	France[3]	19.0	19.0	19.9	14.6	9.4	11.9	x(8)	16.7	16.1	16.2
	Germany	10.7	13.8	18.0	15.0	14.0	14.7	14.8	12.0	11.5	11.5
	Greece	m	m	m	m	m	m	m	m	m	m
	Hungary	m	10.9	10.6	10.9	12.3	11.6	13.1	19.5	17.0	17.1
	Iceland	7.2	7.2	x(4)	10.0	10.6	10.2	x(5, 10)	x(10)	x(10)	10.1
	Ireland[2]	4.7	10.3	17.8	x(6)	x(6)	12.8	x(6)	x(10)	x(10)	15.9
	Italy[2]	11.2	11.2	10.6	9.7	11.8	10.8	m	7.5	19.7	19.5
	Japan	15.8	16.5	18.8	14.7	12.3	13.4	x(5, 10)	7.5	11.8	10.4
	Korea	17.9	17.9	24.1	20.2	16.5	18.2	a	m	m	m
	Luxembourg[2]	m	12.2	12.1	x(6)	x(6)	9.1	m	m	m	m
	Mexico	27.1	27.1	28.0	33.9	25.8	30.7	a	13.3	14.5	14.4
	Netherlands[2]	m	x(3)	15.8	x(6)	x(6)	15.8	x(6)	n	14.9	14.9
	New Zealand	9.6	9.6	17.1	16.2	12.8	14.5	17.1	17.3	17.9	17.8
	Norway[2]	m	m	10.8	10.1	9.9	10.0	x(5)	x(10)	x(10)	9.3
	Poland	m	18.8	10.5	12.9	12.2	12.5	14.1	11.5	16.8	16.7
	Portugal	m	14.7	11.3	8.1	7.3	7.7	x(5, 10)	x(10)	x(10)	13.8
	Slovak Republic	13.2	13.3	18.6	14.5	15.1	14.8	9.3	10.5	15.5	15.4
	Spain	m	13.1	13.1	10.3	8.7	9.8	a	8.8	11.6	11.1
	Sweden	6.1	6.1	12.2	11.4	14.7	13.1	12.5	x(10)	x(10)	8.5
	Switzerland[1, 2]	m	16.6	15.4	12.1	10.4	11.7	m	m	m	m
	Turkey	m	27.1	24.4	a	17.0	17.0	a	80.8	20.0	25.7
	United Kingdom	16.8	17.9	20.2	15.0	12.4	13.4	x(5)	x(10)	x(10)	16.9
	United States	11.0	13.4	14.3	14.8	15.6	15.1	14.7	x(10)	x(10)	15.0
	OECD average	**13.1**	**14.4**	**16.4**	**13.7**	**13.5**	**13.7**	**13.8**	**19.7**	**16.2**	**15.8**
	EU19 average	**12.3**	**13.2**	**14.6**	**11.5**	**12.0**	**12.0**	**13.2**	**12.8**	**15.8**	**15.4**
Partner countries	Brazil	14.0	18.8	24.5	21.2	18.4	20.0	a	x(10)	x(10)	15.9
	China	m	22.4	17.9	16.0	17.5	16.7	m	10.1	m	m
	Estonia	m	m	16.4	16.0	12.4	13.8	x(5)	m	m	m
	India	m	m	m	m	m	m	m	m	m	m
	Indonesia	m	14.9	21.4	15.4	18.1	16.4	a	x(10)	x(10)	17.6
	Israel[2]	11.1	21.9	16.3	12.2	10.9	11.4	m	m	m	m
	Russian Federation[2, 4]	m	m	17.3	x(6)	x(6)	8.7	x(6)	10.2	13.5	12.6
	Slovenia	9.4	9.4	15.8	8.9	13.7	11.3	x(5)	x(10)	x(10)	20.8

1. Includes only general programmes in upper secondary education.
2. Public institutions only (for Australia, for tertiary-type A and advanced research programmes only; for Ireland, at pre-primary and secondary levels only; for Italy, from pre-primary to secondary level; for Israel, at pre-primary level only; for the Russian Federation, at primary level only).
3. Excludes independent private institutions.
4. Excludes part-time personnel in public institutions at lower secondary and general upper secondary levels.

Source: *Education at a Glance 2010: OECD Indicators,* OECD Publishing. India, Indonesia: UNESCO Institute for Statistics (World Education Indicators Programme). China: Based on the *Educational Statistics Yearbook* in China 2008. See Annex 3 for notes *(www.oecd.org/edu/eag2010)*.

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Table A.3 (1/2)

Teachers' salaries (2008)

Annual statutory teachers' salaries in public institutions at starting salary, after 15 years of experience and at the top of the scale, by level of education, in equivalent USD converted using PPPs

		Primary education				Lower secondary education				Upper secondary education				
		Starting salary/ minimum training	Salary after 15 years of experience/ minimum training	Salary at top of scale/ minimum training	Ratio of salary at top of scale to starting salary	Starting salary/ minimum training	Salary after 15 years of experience/ minimum training	Salary at top of scale/ minimum training	Ratio of salary at top of scale to starting salary	Starting salary/ minimum training	Salary after 15 years of experience/ minimum training	Salary at top of scale/ minimum training	Ratio of salary at top of scale to starting salary	Years from starting to top salary (lower secondary education)
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
OECD countries	Australia	33 153	46 096	46 096	1.39	33 336	46 908	46 908	1.41	33 336	46 908	46 908	1.41	9
	Austria	28 622	37 914	56 709	1.98	29 928	40 993	58 921	1.97	30 353	42 177	62 045	2.04	34
	Belgium (Fl.)	29 223	41 093	50 190	1.72	29 223	41 093	50 190	1.72	36 360	52 667	63 391	1.74	27
	Belgium (Fr.)	28 115	39 430	48 163	1.71	28 115	39 430	48 163	1.71	34 885	50 541	60 838	1.74	27
	Chile	m	m	m	m	m	m	m	m	m	m	m	m	m
	Czech Republic	16 013	21 652	23 693	1.48	15 976	22 084	24 049	1.51	16 587	23 540	25 846	1.56	32
	Denmark	37 449	42 308	42 308	1.13	37 449	42 308	42 308	1.13	39 085	51 034	51 034	1.31	8
	England	30 534	44 630	44 630	1.46	30 534	44 630	44 630	1.46	30 534	44 630	44 630	1.46	10
	Finland	29 386	38 217	47 976	1.63	32 513	40 953	51 512	1.58	32 731	44 919	57 925	1.77	16
	France	23 735	31 927	47 108	1.98	26 123	34 316	49 607	1.90	26 400	34 593	49 912	1.89	34
	Germany	43 524	54 184	58 510	1.34	48 004	59 156	65 925	1.37	51 722	63 634	72 876	1.41	28
	Greece	25 974	31 946	38 658	1.49	25 974	31 946	38 658	1.49	25 974	31 946	38 658	1.49	33
	Hungary	12 175	15 049	20 208	1.66	12 175	15 049	20 208	1.66	13 226	18 079	25 523	1.93	40
	Iceland	24 266	27 226	30 774	1.27	24 266	27 226	30 774	1.27	25 503	31 983	33 483	1.31	18
	Ireland	32 657	54 100	61 304	1.88	32 657	54 100	61 304	1.88	32 657	54 100	61 304	1.88	22
	Italy	26 074	31 520	38 381	1.47	28 098	34 331	42 132	1.50	28 098	35 290	44 041	1.57	35
	Japan	27 545	48 655	61 518	2.23	27 545	48 655	61 518	2.23	27 545	48 655	63 184	2.29	34
	Korea	31 532	54 569	87 452	2.77	31 407	54 444	87 327	2.78	31 407	54 444	87 327	2.78	37
	Luxembourg	48 793	67 723	101 163	2.07	71 508	98 849	124 231	1.74	71 508	98 849	124 231	1.74	30
	Mexico	14 552	19 072	31 557	2.17	18 620	24 261	40 094	2.15	m	m	m	m	14
	Netherlands	35 428	45 916	51 226	1.45	36 403	50 227	55 929	1.54	36 762	67 105	73 964	2.01	17
	New Zealand	25 964	38 412	38 412	1.48	25 964	38 412	38 412	1.48	25 964	38 412	38 412	1.48	8
	Norway	29 635	37 023	37 023	1.25	29 635	37 023	37 023	1.25	31 652	39 016	39 016	1.23	16
	Poland	7 127	14 094	14 686	2.06	8 076	16 137	16 818	2.08	9 173	18 548	19 334	2.11	10
	Portugal	21 677	35 486	55 654	2.57	21 677	35 486	55 654	2.57	21 677	35 486	55 654	2.57	31
	Scotland	30 475	48 611	48 611	1.60	30 475	48 611	48 611	1.60	30 475	48 611	48 611	1.60	6
	Slovak Republic	m	m	m	m	m	m	m	m	m	m	m	m	m
	Spain	37 172	42 796	52 391	1.41	40 729	46 794	56 728	1.39	42 440	48 945	59 234	1.40	38
	Sweden	28 409	33 055	37 967	m	28 984	33 885	38 431	m	30 533	36 163	41 131	m	a
	Switzerland	44 308	56 493	69 354	1.57	50 427	64 580	78 801	1.56	58 781	76 207	89 655	1.53	27
	Turkey	m	m	m	m	m	m	m	a	m	m	m	m	m
	United States	35 999	44 172	50 922	m	35 915	44 000	53 972	m	36 398	47 317	53 913	m	m
	OECD average	**28 949**	**39 426**	**48 022**	**1.71**	**30 750**	**41 927**	**50 649**	**1.70**	**32 563**	**45 850**	**54 717**	**1.74**	**24**
	EU19 average	**28 628**	**38 582**	**46 977**	**1.69**	**30 731**	**41 519**	**49 700**	**1.67**	**32 059**	**45 043**	**54 009**	**1.75**	**25**
Partner countries	Brazil	m	m	m	m	m	m	m	m	m	m	m	m	m
	China	m	m	m	m	m	m	m	m	m	m	m	m	m
	Estonia	11 981	12 687	17 510	1.46	11 981	12 687	17 510	1.46	11 981	12 687	17 510	1.46	7
	India	m	m	m	m	m	m	m	m	m	m	m	m	m
	Indonesia	1 617	2 046	2 331	1.44	1 723	2 331	2 532	1.47	1 995	2 582	2 813	1.41	32
	Israel	18 199	19 868	27 680	1.52	18 199	22 410	27 680	1.52	18 199	22 410	27 680	1.52	36
	Russian Federation	m	m	m	m	m	m	m	m	m	m	m	m	m
	Slovenia	27 470	32 075	33 967	1.24	27 470	32 075	33 967	1.24	27 470	32 075	33 967	1.24	13

Note: Ratio of salary at the top of the scale to starting salary has not been calculated for Sweden and the United States because the underlying salaries are estimates derived from actual rather than statutory salaries.

Source: *Education at a Glance 2010: OECD Indicators*, OECD Publishing. China, India and Indonesia: UNESCO Institute for Statistics (World Education Indicators Programme). See Annex 3 for notes *(www.oecd.org/edu/eag2010)*.

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Table A.3 (2/2)

Teachers' salaries (2008)

Annual statutory teachers' salaries in public institutions at starting salary, after 15 years of experience and at the top of the scale, by level of education, in equivalent USD converted using PPPs

		Ratio of salary after 15 years of experience (minimum training) to GDP per capita			Ratio of salary after 15 years of experience (minimum training) to earnings for full-time full-year workers with tertiary education aged 25 to 64			Salary per hour of net contact (teaching) time after 15 years of experience			Ratio of salary per teaching hour of upper secondary to primary teachers (after 15 years of experience)
		Primary education	Lower secondary education	Upper secondary education	Primary education	Lower secondary education	Upper secondary education	Primary education	Lower secondary education	Upper secondary education	
		(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
OECD countries	Australia[1]	1.25	1.27	1.27	0.93	0.94	0.94	53	58	58	1.10
	Austria[1]	1.02	1.10	1.13	0.72	0.77	0.79	49	68	72	1.47
	Belgium (Fl.)[1]	1.17	1.17	1.51	0.90	0.90	1.14	51	59	81	1.60
	Belgium (Fr.)[1]	1.13	1.13	1.44	0.86	0.86	1.10	54	60	84	1.54
	Chile	m	m	m	m	m	m	m	m	m	m
	Czech Republic[2]	0.89	0.91	0.97	0.49	0.50	0.53	25	35	39	1.52
	Denmark[1]	1.16	1.16	1.40	0.85	0.85	1.06	65	65	140	2.15
	England[2]	1.26	1.26	1.26	0.82	0.82	0.82	68	62	62	0.91
	Finland[3]	1.07	1.15	1.26	0.87	0.93	1.02	56	69	82	1.45
	France[1]	0.97	1.05	1.05	0.78	0.85	0.85	34	53	55	1.59
	Germany[2]	1.55	1.69	1.82	0.89	0.97	1.04	67	78	89	1.32
	Greece[1]	1.13	1.13	1.13	0.74	0.74	0.74	54	75	75	1.38
	Hungary[2]	0.78	0.78	0.94	0.50	0.50	0.60	25	25	30	1.20
	Iceland[1]	0.74	0.74	0.87	0.50	0.50	0.61	41	41	57	1.41
	Ireland	1.26	1.26	1.26	m	m	m	59	74	74	1.25
	Italy[1]	1.01	1.10	1.13	0.54	0.58	0.60	43	57	59	1.37
	Japan	1.44	1.44	1.44	m	m	m	69	81	97	1.42
	Korea[3]	2.01	2.01	2.01	0.82	0.81	0.81	65	88	90	1.39
	Luxembourg	0.81	1.18	1.18	m	m	m	92	156	156	1.70
	Mexico	1.33	1.69	m	m	m	m	24	23	m	m
	Netherlands[1]	1.14	1.25	1.66	0.73	0.80	1.07	49	67	89	1.81
	New Zealand[2]	1.42	1.42	1.42	0.97	0.97	0.97	39	40	40	1.04
	Norway[3]	0.66	0.66	0.69	0.66	0.66	0.70	50	57	75	1.49
	Poland[2]	0.84	0.96	1.10	0.59	0.68	0.78	27	31	36	1.32
	Portugal[1]	1.55	1.55	1.55	0.72	0.72	0.72	42	47	47	1.14
	Scotland[2]	1.38	1.38	1.38	0.89	0.89	0.89	57	57	57	1.00
	Slovak Republic	m	m	m	m	m	m	m	m	m	m
	Spain[3]	1.36	1.49	1.56	1.12	1.26	1.28	49	66	71	1.45
	Sweden[3]	0.90	0.92	0.98	0.90	0.93	0.99	m	m	m	m
	Switzerland	1.34	1.53	1.80	m	m	m	m	m	m	m
	Turkey	m	m	m	m	m	m	m	m	m	m
	United States[2]	0.94	0.94	1.01	0.60	0.60	0.65	40	41	45	1.12
	OECD average	**1.16**	**1.22**	**1.29**	**0.77**	**0.79**	**0.86**	**50**	**60**	**71**	**1.39**
	EU19 average	**1.12**	**1.18**	**1.29**	**0.77**	**0.81**	**0.89**	**51**	**63**	**73**	**1.43**
Partner countries	Brazil	m	m	m	m	m	m	m	m	m	m
	China	m	m	m	m	m	m	m	m	m	m
	Estonia[2]	0.61	0.61	0.61	0.70	0.70	0.70	20	20	22	1.09
	India	m	m	m	m	m	m	m	m	m	m
	Indonesia	0.51	0.59	0.65	m	m	m	m	m	m	m
	Israel[2]	0.73	0.82	0.82	0.49	0.56	0.56	26	37	41	1.57
	Russian Federation	m	m	m	m	m	m	m	m	m	m
	Slovenia[1]	1.18	1.18	1.18	0.55	0.55	0.55	47	47	51	1.09

1. Year of reference 2006 for Columns 17, 18 and 19.
2. Year of reference 2008 for Columns 17, 18 and 19.
3. Year of reference 2007 for Columns 17, 18 and 19.

Source: *Education at a Glance 2010: OECD Indicators,* OECD Publishing. China, India and Indonesia: UNESCO Institute for Statistics (World Education Indicators Programme). See Annex 3 for notes *(www.oecd.org/edu/eag2010)*.

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Table A.4

Organization of teachers' working time (2008)

Number of teaching weeks, teaching days, net teaching hours, and teacher working time over the school year, in public institutions

		Number of weeks of instruction			Number of days of instruction			Net teaching time in hours			Working time required at school in hours			Total statutory working time in hours		
		Primary education	Lower secondary education	Upper secondary education, general programmes	Primary education	Lower secondary education	Upper secondary education, general programmes	Primary education	Lower secondary education	Upper secondary education, general programmes	Primary education	Lower secondary education	Upper secondary education, general programmes	Primary education	Lower secondary education	Upper secondary education, general programmes
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
OECD countries	Australia	40	40	40	196	196	196	873	812	810	1 207	1 228	1 228	a	a	a
	Austria	38	38	38	180	180	180	779	607	589	a	a	a	1 776	1 776	a
	Belgium (Fl.)	37	37	37	180	181	181	810	695	649	936	a	a	a	a	a
	Belgium (Fr.)	37	37	37	181	181	181	724	662	603	a	a	a	a	a	a
	Chile	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Czech Republic	40	40	40	193	193	193	849	637	608	a	a	a	1 688	1 688	1 688
	Denmark	42	42	42	200	200	200	648	648	364	1 306	1 306	m	1 680	1 680	1 680
	England	38	38	38	190	190	190	654	722	722	1 265	1 265	1 265	1 265	1 265	1 265
	Finland	38	38	38	188	188	188	677	592	550	a	a	a	a	a	a
	France	36	36	36	m	m	m	926	644	630	a	a	a	a	a	a
	Germany	40	40	40	193	193	193	805	756	715	a	a	a	1 775	1 775	1 775
	Greece	36	32	32	178	158	158	593	429	429	1 140	1 170	1 170	a	a	a
	Hungary	37	37	37	185	185	185	611	611	611	a	a	a	1 864	1 864	1 864
	Iceland	36	36	35	180	180	175	671	671	560	1 650	1 650	1 720	1 800	1 800	1 800
	Ireland	37	33	33	183	167	167	915	735	735	1 036	735	735	a	a	a
	Italy	38	38	38	167	167	167	735	601	601	a	a	a	a	a	a
	Japan	40	40	40	201	201	198	709	603	500	a	a	a	1 899	1 899	1 899
	Korea	40	40	40	220	220	220	840	616	604	a	a	a	1 680	1 680	1 680
	Luxembourg	36	36	36	176	176	176	739	634	634	900	828	828	a	a	a
	Mexico	41	41	36	200	200	173	800	1047	848	800	1 167	971	a	a	a
	Netherlands	40	m	m	195	m	m	930	750	750	a	a	a	1 659	1 659	1 659
	New Zealand	39	39	38	197	194	190	985	968	950	985	968	950	a	a	a
	Norway	38	38	38	190	190	190	741	654	523	1 300	1 225	1 150	1 688	1 688	1 688
	Poland	38	38	38	185	185	185	513	513	513	a	a	a	1 520	1 520	1 520
	Portugal	37	37	37	171	171	171	855	752	752	1 261	1 261	1 261	1 432	1 432	1 432
	Scotland	38	38	38	190	190	190	855	855	855	a	a	a	1 365	1 365	1 365
	Slovak Republic	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Spain	37	37	36	176	176	171	880	713	693	1 140	1 140	1 140	1 425	1 425	1 425
	Sweden	a	a	a	a	a	a	a	a	a	1 360	1 360	1 360	1 767	1 767	1 767
	Switzerland	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Turkey	m	a	m	m	a	m	m	a	m	m	a	m	m	a	m
	United States	36	36	36	180	180	180	1 097	1 068	1 051	1 381	1 381	1 378	1 913	1 977	1 998
	OECD average	**38**	**38**	**37**	**187**	**186**	**184**	**786**	**703**	**661**	**1 178**	**1 192**	**1 166**	**1 659**	**1 662**	**1 657**
	EU19 average	**38**	**37**	**37**	**184**	**181**	**181**	**763**	**661**	**632**	**1 149**	**1 133**	**1 108**	**1 601**	**1 601**	**1 585**
Partner countries	Brazil	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	China	35	35	35	175	175	175	m	m	m	m	m	m	m	m	m
	Estonia	39	39	39	175	175	175	630	630	578	1 540	1 540	1 540	a	a	a
	India	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	Indonesia	44	44	44	252	164	164	1 260	738	738	m	m	m	m	m	m
	Israel	43	42	42	185	178	178	755	598	541	981	783	712	a	a	a
	Russian Federation	34	35	35	164	169	169	738	761	761	a	a	a	a	a	a
	Slovenia	40	40	40	188	188	188	682	682	626	a	a	a	a	a	a

Source: *Education at a Glance 2010: OECD Indicators,* OECD Publishing. India, Indonesia: UNESCO Institute for Statistics (World Education Indicators Programme). China: The Ministry of Education, *Notes on the Experimental Curriculum of Compulsory Education,* 19 November 2001. See Annex 3 for notes *(www.oecd.org/edu/eag2010)*.

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Table A.5

Number of teaching hours per year (1996, 2008)

Net contact time in hours per year in public institutions by level of education, and index of change from 1996 to 2008

		Primary education			Lower secondary education			Upper secondary education, general programmes		
		2008	1996	Index of change 1996-2008 (1996 = 100)	2008	1996	Index of change 1996-2008 (1996 = 100)	2008	1996	Index of change 1996-2008 (1996 = 100)
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
OECD countries	Australia	873	m	m	812	m	m	810	m	m
	Austria	779	684	114	607	658	92	589	623	95
	Belgium (Fl.)	810	841	96	695	724	96	649	679	96
	Belgium (Fr.)	724	858	84	662	734	90	603	677	89
	Chile	m	m	m	m	m	m	m	m	m
	Czech Republic	849	w	m	637	607	105	608	580	105
	Denmark	648	640	101	648	640	101	364	560	65
	England	654	w	m	722	w	m	722	m	m
	Finland	677	m	m	592	m	m	550	m	m
	France	926	900	103	644	647	100	630	636	99
	Germany	805	772	104	756	715	106	715	671	106
	Greece	593	780	76	429	629	68	429	629	68
	Hungary	611	w	m	611	473	129	611	473	129
	Iceland	671	m	m	671	m	m	560	m	m
	Ireland	915	915	100	735	735	100	735	735	100
	Italy	735	735	100	601	601	100	601	601	100
	Japan	709	m	m	603	m	m	500	m	m
	Korea	840	m	m	616	w	m	604	w	m
	Luxembourg	739	m	m	634	m	m	634	m	m
	Mexico	800	800	100	1 047	1 182	89	848	m	m
	Netherlands	930	930	100	750	867	87	750	867	87
	New Zealand	985	985	100	968	968	100	950	950	100
	Norway	741	713	104	654	633	103	523	505	104
	Poland	513	m	m	513	m	m	513	m	m
	Portugal	855	783	109	752	644	117	752	574	131
	Scotland	855	975	88	855	m	m	855	917	93
	Slovak Republic	m	m	m	m	m	m	m	m	m
	Spain	880	900	98	713	a	m	693	630	110
	Sweden	a	624	m	a	576	m	a	528	m
	Switzerland	m	871	m	m	850	m	m	669	m
	Turkey	m	m	m	a	a	a	m	m	m
	United States	1 097	w	m	1 068	w	m	1 051	w	m
	OECD average	**786**	**817**		**703**	**716**		**661**	**658**	
	EU19 average	**763**	**810**		**661**	**661**		**632**	**649**	
Partner countries	Brazil	m	m	m	800	m	m	800	m	m
	Estonia	630	m	m	630	m	m	578	m	m
	Israel	755	m	m	598	m	m	541	m	m
	Russian Federation	738	m	m	761	m	m	761	m	m
	Slovenia	682	m	m	682	m	m	626	m	m

Source: *Education at a Glance 2010: OECD Indicators*, OECD Publishing. See Annex 3 for notes *(www.oecd.org/edu/eag2010)*.

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Table A.6

Participation of teachers in professional development in the previous 18 months (2007-08)

Participation rates, average number of days and average of compulsory days of professional development undertaken by teachers of lower secondary education in the 18 months prior to the survey

	Percentage of teachers who undertook some professional development in the previous 18 months		Average days of professional development across all teachers		Average days of professional development among those who participated		Average percentage of professional development days taken that were compulsory	
	%	(S.E.)	Mean	(S.E.)	Mean	(S.E.)	%	(S.E.)
Australia	96.7	(0.43)	8.7	(0.19)	9.0	(0.20)	47.3	(1.17)
Austria	96.6	(0.37)	10.5	(0.17)	10.9	(0.16)	31.4	(0.66)
Belgium (Fl.)	90.3	(0.73)	8.0	(0.38)	8.8	(0.42)	33.6	(0.95)
Brazil	83.0	(1.21)	17.3	(0.70)	20.8	(0.79)	40.2	(1.17)
Bulgaria	88.3	(1.17)	27.2	(1.65)	30.8	(2.04)	46.9	(2.11)
Denmark	75.6	(1.26)	9.8	(0.34)	12.9	(0.40)	34.6	(1.43)
Estonia	92.7	(0.50)	13.1	(0.29)	14.2	(0.31)	49.2	(1.20)
Hungary	86.9	(1.77)	14.5	(0.50)	16.7	(0.41)	46.1	(1.58)
Iceland	77.1	(1.10)	10.7	(0.44)	13.9	(0.56)	49.9	(1.30)
Ireland	89.7	(0.78)	5.6	(0.21)	6.2	(0.21)	41.4	(0.99)
Italy	84.6	(0.76)	26.6	(0.98)	31.4	(1.17)	40.0	(1.08)
Korea	91.9	(0.59)	30.0	(0.57)	32.7	(0.55)	46.9	(0.85)
Lithuania	95.5	(0.40)	11.2	(0.21)	11.8	(0.21)	56.6	(0.98)
Malaysia	91.7	(0.67)	11.0	(0.32)	11.9	(0.33)	88.1	(0.64)
Malta	94.1	(0.75)	7.3	(0.25)	7.8	(0.26)	78.4	(1.07)
Mexico	91.5	(0.60)	34.0	(1.60)	37.1	(1.78)	66.4	(1.22)
Norway	86.7	(0.87)	9.2	(0.30)	10.6	(0.34)	55.5	(1.25)
Poland	90.4	(0.67)	26.1	(1.10)	28.9	(1.20)	41.0	(1.14)
Portugal	85.8	(0.87)	18.5	(0.89)	21.6	(1.01)	35.1	(0.99)
Slovak Republic	75.0	(1.13)	7.2	(0.30)	9.6	(0.38)	44.1	(1.19)
Slovenia	96.9	(0.35)	8.3	(0.20)	8.6	(0.20)	60.5	(0.93)
Spain	100.0	(0.03)	25.6	(0.51)	25.6	(0.51)	66.8	(0.99)
Turkey	74.8	(2.09)	11.2	(0.52)	14.9	(0.65)	72.8	(1.65)
TALIS average	**88.5**	**(0.20)**	**15.3**	**(0.14)**	**17.3**	**(0.16)**	**51.0**	**(0.25)**

Source: OECD (2009), *Creating Effective Teaching and Learning Environments: First Results from TALIS.*

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Table A.7

Amount of professional development undertaken by teachers in the previous 18 months (2007-08) – teacher characteristics

Average number of days of professional development undertaken by teachers of different characteristics [among those teachers of lower secondary education who took some professional development]

	Female teachers		Male teachers		Teachers aged under 30 years		Teachers aged 30-39 years		Teachers aged 40-49 years		Teachers aged 50+ years	
	Mean	(S.E.)	Mean	(S.E.)	Mean	(S.E.)	Mean	(S.E.)	Mean	(S.E.)	Mean	(S.E.)
Australia	9.0	(0.24)	9.0	(0.28)	9.0	(0.52)	8.9	(0.41)	9.1	(0.34)	9.1	(0.31)
Austria	11.2	(0.20)	10.3	(0.23)	12.4	(0.72)	10.5	(0.47)	11.3	(0.25)	10.5	(0.25)
Belgium (Fl.)	8.5	(0.55)	9.5	(0.48)	8.7	(0.62)	8.8	(0.79)	8.6	(0.61)	9.2	(0.88)
Brazil	20.7	(0.88)	21.2	(1.02)	22.2	(1.51)	22.3	(1.15)	19.7	(0.85)	17.0	(1.40)
Bulgaria	30.7	(2.00)	31.5	(3.79)	27.3	(5.36)	34.2	(4.29)	33.6	(4.21)	26.8	(1.67)
Denmark	13.4	(0.53)	12.3	(0.68)	17.3	(3.02)	13.4	(0.70)	15.8	(1.07)	10.3	(0.50)
Estonia	14.6	(0.36)	11.6	(0.51)	15.3	(1.19)	16.8	(0.80)	15.2	(0.55)	11.8	(0.36)
Hungary	16.6	(0.52)	16.9	(1.28)	15.4	(1.05)	16.3	(0.95)	18.3	(0.80)	15.4	(1.29)
Iceland	14.4	(0.68)	12.7	(0.83)	11.5	(1.41)	12.9	(0.84)	15.2	(0.96)	14.2	(0.99)
Ireland	6.0	(0.23)	6.7	(0.45)	5.8	(0.49)	6.6	(0.49)	6.8	(0.45)	5.7	(0.30)
Italy	30.5	(1.12)	34.8	(2.52)	64.1	(12.08)	50.1	(3.36)	30.4	(1.54)	24.1	(1.04)
Korea	34.2	(0.69)	30.0	(0.91)	43.3	(1.61)	36.7	(1.01)	30.3	(0.82)	24.3	(1.51)
Lithuania	12.1	(0.24)	10.1	(0.46)	11.2	(0.75)	11.5	(0.41)	12.5	(0.34)	11.4	(0.31)
Malaysia	11.8	(0.39)	12.3	(0.44)	12.0	(0.56)	11.7	(0.43)	12.2	(0.37)	11.9	(0.65)
Malta	7.9	(0.39)	7.6	(0.32)	7.7	(0.51)	7.5	(0.42)	8.6	(0.86)	7.9	(0.50)
Mexico	39.9	(2.17)	33.9	(2.72)	48.5	(5.64)	41.8	(3.88)	34.5	(2.27)	28.1	(2.26)
Norway	10.9	(0.49)	10.1	(0.47)	10.2	(0.95)	10.4	(0.58)	12.6	(0.86)	9.7	(0.55)
Poland	29.9	(1.40)	25.6	(1.60)	35.2	(3.22)	33.2	(2.08)	25.5	(1.45)	17.9	(1.64)
Portugal	20.3	(1.06)	24.8	(1.95)	38.5	(5.51)	21.3	(1.29)	20.2	(1.12)	17.7	(2.21)
Slovak Republic	9.9	(0.43)	8.3	(0.61)	9.8	(1.05)	9.7	(0.52)	10.9	(0.53)	8.5	(0.45)
Slovenia	8.7	(0.23)	8.3	(0.34)	9.4	(0.54)	9.7	(0.49)	8.4	(0.25)	7.2	(0.26)
Spain	26.7	(0.64)	24.2	(0.60)	29.4	(1.51)	25.7	(0.91)	26.8	(0.73)	23.0	(0.69)
Turkey	13.6	(0.82)	16.2	(1.29)	16.9	(1.13)	13.6	(0.74)	14.4	(1.91)	10.6	(1.18)
TALIS average	**17.5**	**(0.18)**	**16.9**	**(0.29)**	**20.9**	**(0.72)**	**18.9**	**(0.34)**	**17.4**	**(0.28)**	**14.4**	**(0.23)**

	Teachers with qualification at ISCED level 5B or below		Teachers with an ISCED level 5A Bachelor degree		Teachers with an ISCED level 5A Master degree or a higher level of qualification	
	Mean	(S.E.)	Mean	(S.E.)	Mean	(S.E.)
Australia	9.8	(1.24)	8.7	(0.20)	10.6	(0.51)
Austria	11.3	(0.22)	14.1	(2.72)	10.2	(0.25)
Belgium (Fl.)	8.6	(0.44)	15.5	(4.03)	8.0	(0.72)
Brazil	18.9	(2.00)	20.8	(0.87)	24.8	(2.87)
Bulgaria	28.0	(4.37)	28.4	(3.40)	32.3	(2.93)
Denmark	12.8	(4.47)	12.4	(0.39)	18.7	(1.83)
Estonia	14.7	(1.02)	13.3	(0.43)	14.9	(0.43)
Hungary	23.2	(6.28)	17.1	(0.53)	15.7	(0.59)
Iceland	10.4	(0.79)	15.1	(0.74)	17.8	(2.41)
Ireland	5.9	(0.66)	5.9	(0.25)	7.9	(0.65)
Italy	28.4	(1.53)	26.3	(3.81)	32.0	(1.25)
Korea	55.5	(11.32)	31.5	(0.65)	34.4	(0.82)
Lithuania	11.1	(0.54)	11.5	(0.32)	12.5	(0.34)
Malaysia	10.5	(0.65)	12.0	(0.34)	13.6	(0.76)
Malta	7.6	(0.57)	7.8	(0.30)	8.0	(0.67)
Mexico	27.4	(2.62)	36.4	(2.26)	53.1	(5.31)
Norway	16.0	(3.02)	9.9	(0.39)	12.7	(0.81)
Poland	28.7	(8.87)	27.5	(4.46)	29.0	(1.21)
Portugal	21.1	(3.54)	19.8	(1.07)	35.3	(3.34)
Slovak Republic	12.4	(2.90)	9.9	(2.81)	9.6	(0.37)
Slovenia	7.7	(0.22)	9.3	(0.31)	14.0	(2.98)
Spain	23.8	(2.20)	22.1	(1.22)	26.2	(0.49)
Turkey	10.6	(1.07)	15.0	(0.76)	19.3	(2.95)
TALIS average	**17.6**	**(0.80)**	**17.0**	**(0.41)**	**20.0**	**(0.41)**

Denotes categories that include less than 5% of teachers.

Source: OECD (2009), *Creating Effective Teaching and Learning Environments: First Results from TALIS.*

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Table A.8

Amount of professional development undertaken by teachers in the previous 18 months (2007-08) – school characteristics

Average number of days of professional development undertaken by teachers in schools of different characteristics [among those teachers of lower secondary education who took some professional development]

	Teachers in public schools		Teachers in private schools		Teachers in schools in a village		Teachers in schools in a small town		Teachers in schools in a town		Teachers in schools in a city		Teachers in schools in a large city	
	Mean	(S.E.)	Mean	(S.E.)	Mean	(S.E.)	Mean	(S.E.)	Mean	(S.E.)	Mean	(S.E.)	Mean	(S.E.)
Australia	8.9	(0.24)	9.2	(0.32)	10.1	(0.57)	9.4	(0.74)	9.0	(0.35)	8.8	(0.40)	9.0	(0.32)
Austria	11.0	(0.19)	10.2	(0.55)	11.3	(0.44)	10.2	(0.24)	12.1	(0.58)	11.2	(0.45)	11.3	(0.40)
Belgium (Fl.)	12.2	(1.31)	7.6	(0.34)	15.6	(4.07)	7.7	(0.46)	9.1	(0.86)	10.3	(0.88)	a	a
Brazil	21.1	(0.91)	19.0	(1.36)	22.8	(3.01)	19.5	(1.18)	20.2	(1.42)	21.3	(1.23)	20.2	(1.19)
Bulgaria	30.9	(2.08)	20.5	(9.36)	27.5	(3.54)	32.9	(6.88)	32.1	(2.56)	30.6	(3.18)	30.2	(2.55)
Denmark	13.4	(0.49)	12.4	(0.99)	11.7	(0.98)	14.0	(1.45)	12.1	(0.77)	15.0	(1.37)	15.4	(1.74)
Estonia	14.2	(0.31)	14.9	(3.11)	13.9	(0.45)	14.1	(0.76)	14.8	(0.85)	14.3	(0.64)	a	a
Hungary	16.6	(0.50)	17.0	(0.81)	16.7	(1.17)	17.6	(1.06)	16.2	(1.04)	17.0	(0.91)	16.0	(0.81)
Iceland	14.3	(0.65)	6.9	(2.27)	13.3	(0.71)	14.9	(1.21)	15.4	(1.37)	13.3	(1.09)	a	a
Ireland	6.4	(0.33)	5.7	(0.35)	5.9	(0.45)	5.9	(0.40)	6.2	(0.57)	6.7	(0.97)	5.9	(0.51)
Italy	30.8	(1.20)	44.5	(7.40)	30.4	(2.91)	33.0	(2.38)	29.5	(1.48)	29.2	(2.43)	35.3	(3.84)
Korea	34.3	(0.76)	25.1	(1.29)	32.9	(2.74)	33.0	(2.12)	32.2	(1.58)	32.2	(1.43)	33.1	(0.94)
Lithuania	11.8	(0.22)	11.4	(1.58)	10.9	(0.32)	11.7	(0.54)	12.3	(0.53)	12.2	(0.38)	a	a
Malaysia	12.0	(0.33)	10.0	(1.45)	12.1	(0.60)	11.6	(0.47)	12.3	(0.96)	11.9	(1.04)	13.4	(0.41)
Malta	7.5	(0.34)	8.2	(0.36)	8.6	(0.78)	7.9	(0.33)	7.6	(0.54)	a	a	a	a
Mexico	35.3	(1.57)	44.0	(6.21)	30.6	(7.64)	38.6	(4.31)	35.6	(3.13)	32.2	(2.47)	38.4	(2.43)
Norway	10.7	(0.36)	7.1	(1.14)	11.8	(0.78)	10.4	(0.64)	10.6	(0.59)	8.7	(0.57)	a	a
Poland	29.0	(1.26)	27.9	(3.86)	26.5	(1.32)	31.7	(3.33)	28.1	(1.92)	29.7	(3.70)	45.1	(7.16)
Portugal	21.9	(1.22)	17.9	(1.49)	23.8	(2.18)	20.2	(2.00)	22.9	(1.74)	19.9	(3.23)	18.0	(3.57)
Slovak Republic	9.7	(0.39)	10.0	(1.19)	10.6	(1.07)	9.4	(0.66)	8.9	(0.46)	10.3	(1.19)	a	a
Slovenia	8.6	(0.21)	a	a	8.9	(0.42)	8.4	(0.29)	9.0	(0.63)	8.6	(0.73)	a	a
Spain	27.1	(0.62)	21.1	(0.79)	25.4	(1.50)	27.0	(0.88)	25.3	(0.86)	25.5	(1.28)	24.6	(1.18)
Turkey	15.0	(0.72)	14.9	(1.13)	15.1	(2.42)	17.4	(3.05)	14.9	(1.48)	14.4	(0.83)	15.8	(1.32)
TALIS average	**17.5**	**(0.18)**	**16.6**	**(0.66)**	**17.2**	**(0.50)**	**17.7**	**(0.46)**	**17.2**	**(0.28)**	**17.4**	**(0.34)**	**22.1**	**(0.44)**

Denotes categories that include less than 5% of teachers.

Source: OECD (2009), *Creating Effective Teaching and Learning Environments: First Results from TALIS.*

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Table A.9

Types of professional development undertaken by teachers (2007-08)

Percentage of teachers of lower secondary education undertaking specified professional development activities in the previous 18 months

	Courses and workshops		Education conferences and seminars		Qualification programmes		Observation visits to other schools		Professional development network		Individual and collaborative research		Mentoring and peer observation		Reading professional literature		Informal dialogue to improve teaching	
	%	(S.E.)	%	(S.E.)	%	(S.E.)	%	(S.E.)	%	(S.E.)	%	(S.E.)	%	(S.E.)	%	(S.E.)	%	(S.E.)
Australia	90.6	(0.81)	64.0	(1.34)	11.7	(0.80)	22.2	(1.42)	60.1	(1.38)	36.6	(1.21)	48.6	(1.30)	82.4	(1.09)	93.7	(0.70)
Austria	91.9	(0.56)	49.2	(0.97)	19.9	(0.68)	10.3	(0.55)	37.6	(0.98)	25.9	(0.82)	18.4	(0.84)	89.4	(0.57)	91.9	(0.60)
Belgium (Fl.)	85.2	(0.89)	32.6	(1.33)	17.8	(0.83)	15.1	(1.06)	25.7	(1.05)	31.8	(0.87)	22.1	(0.92)	79.6	(0.98)	91.3	(0.71)
Brazil	80.3	(1.31)	61.0	(1.52)	40.8	(1.27)	32.5	(1.03)	21.9	(0.95)	54.7	(1.17)	47.5	(1.37)	82.5	(0.78)	94.2	(0.58)
Bulgaria	73.7	(2.07)	42.2	(3.44)	50.2	(2.56)	22.5	(2.03)	19.8	(2.22)	24.5	(1.73)	35.4	(3.01)	93.5	(0.96)	94.7	(0.70)
Denmark	81.2	(1.33)	41.6	(1.56)	15.4	(1.47)	10.4	(0.92)	43.5	(1.65)	52.3	(1.51)	17.5	(1.66)	77.3	(1.50)	90.4	(0.89)
Estonia	92.5	(0.66)	50.6	(1.29)	27.7	(0.96)	62.8	(1.37)	42.8	(1.16)	26.6	(1.00)	31.5	(1.35)	87.7	(0.85)	93.8	(0.58)
Hungary	68.7	(1.66)	39.9	(1.64)	26.1	(1.13)	34.6	(2.15)	43.7	(1.83)	17.0	(0.84)	46.7	(1.93)	88.4	(1.11)	79.1	(1.39)
Iceland	72.1	(1.30)	52.1	(1.25)	18.8	(1.02)	60.0	(1.27)	82.6	(1.11)	18.2	(1.08)	33.4	(1.16)	82.8	(1.05)	94.9	(0.65)
Ireland	85.7	(0.88)	42.0	(1.41)	11.4	(0.67)	7.6	(0.75)	51.1	(1.20)	26.3	(1.17)	18.2	(1.12)	60.3	(0.96)	87.4	(0.81)
Italy	66.3	(1.10)	43.5	(1.03)	10.8	(0.50)	16.0	(0.89)	20.0	(0.75)	56.5	(0.92)	27.4	(0.93)	66.2	(0.81)	93.1	(0.46)
Korea	85.0	(0.86)	46.9	(1.24)	27.5	(0.88)	66.8	(1.26)	39.6	(1.00)	50.1	(1.03)	69.4	(1.15)	52.5	(1.06)	90.0	(0.63)
Lithuania	95.7	(0.43)	67.6	(1.10)	43.9	(1.16)	57.1	(1.21)	37.6	(1.05)	48.1	(1.00)	39.7	(1.16)	93.5	(0.50)	96.7	(0.38)
Malaysia	88.6	(0.71)	32.4	(0.93)	22.0	(1.01)	30.0	(1.40)	47.8	(1.25)	21.7	(1.08)	41.8	(1.26)	61.5	(1.63)	95.7	(0.36)
Malta	90.2	(0.96)	51.8	(1.88)	18.1	(1.36)	14.8	(1.23)	39.0	(1.70)	37.4	(1.85)	16.5	(1.19)	61.1	(1.90)	92.3	(1.05)
Mexico	94.3	(0.57)	33.1	(1.23)	33.5	(1.21)	30.5	(1.30)	27.5	(1.13)	62.9	(1.05)	38.1	(1.37)	67.4	(1.05)	88.9	(0.86)
Norway	72.5	(1.40)	40.4	(1.61)	17.6	(0.71)	19.1	(1.49)	35.3	(1.55)	12.3	(0.72)	22.0	(1.50)	64.1	(1.12)	94.0	(0.57)
Poland	90.8	(0.77)	64.3	(1.18)	35.0	(0.95)	19.7	(0.84)	60.7	(1.43)	40.0	(1.08)	66.7	(1.40)	95.2	(0.46)	95.8	(0.36)
Portugal	77.0	(0.91)	51.6	(1.31)	29.5	(0.87)	26.4	(1.03)	15.0	(0.82)	47.1	(1.15)	14.6	(0.84)	73.3	(0.97)	94.2	(0.49)
Slovak Republic	50.1	(1.45)	38.2	(1.38)	38.1	(1.28)	33.1	(1.41)	34.6	(1.46)	11.8	(0.83)	64.8	(1.27)	93.2	(0.64)	95.9	(0.48)
Slovenia	88.1	(0.70)	74.7	(1.05)	10.2	(0.65)	7.7	(0.58)	71.9	(1.38)	22.5	(0.97)	29.1	(0.87)	86.4	(0.73)	97.0	(0.35)
Spain	83.9	(0.86)	36.2	(1.10)	17.2	(0.62)	14.7	(0.75)	22.6	(0.84)	49.2	(0.96)	21.4	(1.00)	68.1	(0.93)	92.6	(0.49)
Turkey	62.3	(1.51)	67.8	(1.99)	19.2	(1.09)	21.1	(1.66)	39.4	(1.67)	40.1	(1.35)	32.2	(2.15)	80.6	(2.14)	92.8	(0.82)
TALIS average	**81.2**	**(0.23)**	**48.9**	**(0.32)**	**24.5**	**(0.23)**	**27.6**	**(0.26)**	**40.0**	**(0.28)**	**35.4**	**(0.24)**	**34.9**	**(0.30)**	**77.7**	**(0.23)**	**92.6**	**(0.14)**

Source: OECD (2009), *Creating Effective Teaching and Learning Environments: First Results from TALIS.*

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Table A.10

Teachers who wanted to participate in more development than they did in the previous 18 months (2007-08)

Percentage of teachers of lower secondary education who wanted to take more professional development than they did in the previous 18 months, by certain teacher and school characteristics

	All teachers		Female teachers		Male teachers		Teachers aged under 40 years		Teachers aged 40+ years		Teachers with qualification below ISCED level 5A		Teachers with qualification at ISCED level 5A Bachelor degree		Teachers with qualification at ISCED level 5A Masters degree or higher		Teachers in public schools		Teachers in private schools	
	%	(S.E.)	%	(S.E.)	%	(S.E.)	%	(S.E.)	%	(S.E.)	%	(S.E.)	%	(S.E.)	%	(S.E.)	%	(S.E.)	%	(S.E.)
Australia	55.2	(1.37)	57.9	(1.67)	51.3	(1.89)	59.0	(1.70)	52.5	(1.70)	24.6	(11.05)	55.0	(1.37)	58.9	(2.83)	55.5	(1.49)	54.8	(2.49)
Austria	44.7	(0.93)	46.0	(1.17)	41.9	(1.36)	48.8	(1.83)	43.5	(1.00)	40.3	(1.18)	41.8	(8.01)	51.9	(1.43)	43.9	(1.01)	53.4	(2.05)
Belgium (Fl.)	30.5	(0.98)	32.3	(1.40)	26.5	(2.50)	34.9	(1.22)	25.6	(1.34)	30.4	(1.02)	23.0	(3.04)	36.0	(3.42)	32.7	(1.17)	29.7	(1.36)
Brazil	84.4	(0.77)	85.9	(0.88)	80.5	(1.30)	85.8	(1.05)	82.6	(1.21)	86.4	(2.41)	83.9	(0.85)	83.3	(3.56)	84.8	(0.89)	83.6	(1.52)
Bulgaria	68.9	(1.77)	69.5	(1.62)	65.8	(4.77)	70.9	(2.83)	68.0	(1.87)	67.6	(4.25)	71.6	(3.98)	68.5	(2.33)	68.9	(1.78)	64.5	(12.29)
Denmark	47.6	(1.39)	49.6	(1.93)	44.8	(2.50)	47.3	(2.41)	47.8	(1.90)	18.0	(6.30)	47.8	(1.37)	52.9	(5.58)	48.0	(1.80)	45.8	(3.01)
Estonia	48.7	(1.07)	48.6	(1.16)	49.2	(2.38)	48.3	(1.90)	48.8	(1.26)	48.7	(2.89)	49.8	(1.74)	47.8	(1.49)	48.6	(1.10)	50.4	(9.40)
Hungary	40.2	(2.00)	39.9	(2.45)	41.0	(2.10)	41.1	(3.19)	39.6	(1.81)	39.3	(18.39)	38.6	(2.07)	44.6	(2.22)	40.1	(1.63)	40.3	(5.22)
Iceland	37.9	(1.47)	40.6	(1.93)	32.0	(2.36)	36.3	(2.23)	39.0	(1.84)	36.5	(2.33)	39.4	(1.80)	32.9	(5.74)	37.5	(1.61)	35.0	(12.03)
Ireland	54.1	(1.37)	55.7	(1.54)	50.7	(2.56)	54.8	(1.87)	53.5	(1.61)	46.5	(5.83)	54.6	(1.45)	53.6	(2.85)	53.6	(2.28)	53.8	(1.81)
Italy	56.4	(0.98)	58.4	(1.08)	49.2	(1.78)	57.0	(1.85)	56.2	(1.07)	54.0	(2.38)	62.9	(3.09)	56.1	(1.07)	56.5	(1.03)	48.5	(5.20)
Korea	58.2	(1.16)	60.5	(1.28)	54.1	(1.92)	67.6	(1.57)	52.5	(1.53)	68.1	(13.27)	58.5	(1.42)	57.6	(1.72)	59.6	(1.41)	50.8	(3.98)
Lithuania	44.7	(1.10)	45.4	(1.12)	40.9	(2.80)	47.9	(1.79)	43.3	(1.28)	44.0	(2.18)	45.2	(1.40)	44.2	(1.84)	45.0	(1.10)	31.6	(6.43)
Malaysia	82.9	(0.95)	83.8	(1.10)	81.1	(1.30)	86.5	(1.12)	77.3	(1.28)	75.0	(2.21)	83.9	(1.05)	85.8	(2.12)	83.0	(0.97)	66.9	(11.42)
Malta	43.3	(1.79)	44.4	(2.33)	41.4	(3.10)	42.5	(2.22)	44.6	(3.04)	40.5	(4.26)	43.3	(1.99)	48.0	(5.52)	41.1	(2.44)	47.7	(2.04)
Mexico	85.3	(0.85)	86.3	(1.04)	84.1	(1.15)	88.0	(1.04)	83.3	(1.15)	80.8	(3.10)	86.1	(0.88)	86.6	(2.15)	85.7	(0.80)	84.8	(3.28)
Norway	70.3	(1.13)	72.5	(1.43)	67.1	(1.76)	70.3	(1.72)	70.4	(1.45)	52.6	(12.23)	71.1	(1.36)	68.6	(2.11)	70.6	(1.16)	72.9	(8.17)
Poland	43.6	(1.04)	45.1	(1.28)	38.9	(2.07)	49.5	(1.54)	37.3	(1.26)	40.7	(8.80)	47.5	(4.38)	43.3	(1.07)	43.5	(1.01)	45.2	(7.26)
Portugal	76.2	(0.91)	77.5	(1.04)	73.1	(1.56)	77.3	(1.22)	75.1	(1.43)	70.7	(4.35)	76.0	(0.99)	79.8	(2.52)	77.0	(0.98)	66.0	(3.51)
Slovak Republic	43.2	(1.34)	44.3	(1.37)	38.6	(2.98)	48.4	(1.90)	39.6	(1.78)	38.4	(7.68)	47.3	(15.00)	43.6	(1.40)	42.6	(1.35)	46.3	(3.89)
Slovenia	35.1	(1.18)	34.9	(1.23)	36.0	(2.38)	39.5	(1.82)	32.2	(1.36)	28.8	(1.48)	40.7	(1.50)	36.0	(7.85)	34.9	(1.14)	a	a
Spain	60.6	(1.02)	63.8	(1.28)	56.4	(1.43)	68.6	(1.59)	56.0	(1.29)	47.6	(3.83)	56.5	(2.53)	62.0	(1.16)	60.6	(1.23)	59.5	(2.31)
Turkey	48.2	(2.21)	51.3	(2.13)	44.8	(3.22)	51.2	(2.40)	37.2	(3.56)	26.2	(5.62)	48.8	(2.23)	58.8	(6.69)	48.4	(2.51)	41.6	(3.71)
TALIS average	**54.8**	**(0.27)**	**56.3**	**(0.32)**	**51.7**	**(0.49)**	**57.5**	**(0.40)**	**52.4**	**(0.36)**	**48.1**	**(1.47)**	**55.4**	**(0.85)**	**56.6**	**(0.74)**	**54.9**	**(0.31)**	**53.3**	**(1.26)**

Denotes categories that include less than 5% of teachers.

Source: OECD (2009), *Creating Effective Teaching and Learning Environments: First Results from TALIS.*

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Table A.11

Teachers' high professional development needs (2007-08)

Percentage of teachers of lower secondary education indicating they have a "High level of need" for professional development in the following areas and overall index of need

	Overall index of development need (Maximum=100)[1]		Content and performance standards		Student assessment practices		Classroom management		Subject field		Instructional practices	
	Index	(S.E.)	%	(S.E.)	%	(S.E.)	%	(S.E.)	%	(S.E.)	%	(S.E.)
Australia	44	(0.35)	8.3	(0.64)	7.5	(0.60)	5.2	(0.52)	5.0	(0.53)	3.6	(0.40)
Austria	51	(0.31)	13.9	(0.69)	12.2	(0.53)	13.6	(0.64)	14.8	(0.59)	18.6	(0.75)
Belgium (Fl.)	47	(0.39)	12.0	(0.65)	15.6	(0.74)	12.1	(0.59)	17.5	(0.74)	14.1	(0.77)
Brazil	58	(0.55)	23.1	(1.31)	21.1	(1.15)	13.7	(0.98)	14.9	(1.06)	14.8	(1.06)
Bulgaria	50	(0.59)	25.7	(2.33)	16.1	(1.45)	12.7	(1.46)	21.2	(1.53)	18.3	(1.67)
Denmark	44	(0.59)	17.1	(1.25)	13.6	(0.97)	2.3	(0.55)	4.6	(0.54)	4.7	(0.57)
Estonia	55	(0.49)	17.7	(0.95)	10.4	(0.65)	13.4	(0.76)	22.6	(1.01)	18.2	(0.78)
Hungary	45	(0.51)	9.2	(0.55)	5.9	(0.51)	3.3	(0.36)	7.4	(0.64)	14.7	(0.81)
Iceland	52	(0.48)	7.3	(0.74)	14.3	(1.00)	11.6	(0.90)	10.3	(0.91)	8.2	(0.76)
Ireland	49	(0.48)	6.7	(0.52)	8.2	(0.77)	6.4	(0.59)	4.1	(0.49)	5.4	(0.60)
Italy	63	(0.30)	17.6	(0.69)	24.0	(0.83)	18.9	(0.84)	34.0	(0.75)	34.9	(0.89)
Korea	70	(0.30)	26.8	(0.92)	21.5	(0.79)	30.3	(0.91)	38.3	(0.96)	39.9	(0.91)
Lithuania	62	(0.41)	39.2	(1.01)	37.3	(1.03)	27.9	(0.96)	43.4	(0.89)	44.5	(0.90)
Malaysia	72	(0.64)	49.8	(1.59)	43.8	(1.43)	41.6	(1.41)	56.8	(1.53)	55.2	(1.47)
Malta	48	(0.57)	8.1	(1.00)	7.2	(0.82)	5.3	(0.78)	6.7	(0.86)	3.9	(0.60)
Mexico	50	(0.59)	13.7	(0.77)	15.0	(0.83)	8.8	(0.66)	11.0	(0.88)	12.3	(0.92)
Norway	55	(0.51)	12.9	(0.85)	21.9	(1.29)	7.7	(0.66)	8.6	(0.70)	8.2	(0.61)
Poland	49	(0.50)	11.9	(0.74)	12.8	(0.77)	17.6	(0.95)	17.0	(0.87)	17.5	(0.75)
Portugal	56	(0.31)	9.8	(0.62)	6.9	(0.51)	5.8	(0.47)	4.8	(0.43)	7.7	(0.54)
Slovak Republic	48	(0.56)	8.2	(0.66)	9.0	(0.57)	9.8	(0.81)	17.2	(0.96)	13.4	(0.89)
Slovenia	57	(0.35)	13.4	(0.67)	22.3	(0.89)	24.0	(0.79)	15.9	(0.78)	19.9	(0.80)
Spain	49	(0.44)	6.0	(0.38)	5.8	(0.42)	8.1	(0.57)	5.0	(0.47)	5.5	(0.39)
Turkey	43	(0.72)	9.8	(0.81)	9.2	(0.90)	6.7	(1.29)	8.9	(0.93)	9.0	(0.92)
TALIS average	**53**	**(0.10)**	**16.0**	**(0.20)**	**15.7**	**(0.19)**	**13.3**	**(0.18)**	**17.0**	**(0.18)**	**17.1**	**(0.18)**

	ICT teaching skills		Teaching special learning needs students		Student discipline and behaviour problems		School management and administration		Teaching in a multicultural setting		Student counselling	
	%	(S.E.)	%	(S.E.)	%	(S.E.)	%	(S.E.)	%	(S.E.)	%	(S.E.)
Australia	17.8	(0.94)	15.1	(0.98)	6.6	(0.71)	5.9	(0.53)	4.0	(0.43)	7.3	(0.61)
Austria	23.8	(0.64)	30.3	(0.94)	32.6	(1.03)	3.9	(0.37)	10.0	(0.68)	13.1	(0.65)
Belgium (Fl.)	14.8	(0.72)	12.8	(0.76)	11.8	(0.71)	2.4	(0.31)	3.7	(0.46)	11.0	(0.68)
Brazil	35.6	(1.33)	63.2	(1.21)	26.5	(1.12)	20.0	(0.78)	33.2	(1.22)	20.7	(1.14)
Bulgaria	26.9	(1.58)	24.4	(1.47)	14.9	(1.82)	8.5	(0.95)	15.5	(2.35)	10.4	(1.30)
Denmark	20.1	(1.67)	24.6	(1.44)	9.8	(1.21)	3.9	(0.49)	7.1	(0.98)	5.5	(0.66)
Estonia	27.9	(0.91)	28.1	(0.95)	23.6	(1.02)	4.6	(0.37)	9.7	(0.77)	21.5	(0.95)
Hungary	23.0	(1.15)	42.0	(1.57)	31.2	(1.50)	3.4	(0.96)	10.7	(0.68)	8.4	(0.83)
Iceland	17.3	(1.08)	23.2	(1.16)	20.0	(0.97)	7.9	(0.84)	14.0	(0.92)	12.9	(0.86)
Ireland	34.2	(1.30)	38.3	(1.32)	13.9	(0.98)	11.8	(0.94)	24.3	(1.31)	24.9	(1.33)
Italy	25.8	(0.81)	35.3	(1.05)	28.3	(1.04)	8.6	(0.49)	25.3	(0.85)	19.7	(0.87)
Korea	17.7	(0.67)	25.6	(0.88)	34.6	(0.92)	10.8	(0.62)	10.4	(0.61)	41.5	(1.04)
Lithuania	36.1	(0.93)	25.4	(0.95)	24.3	(0.89)	9.8	(0.68)	9.8	(0.79)	18.6	(1.09)
Malaysia	43.8	(1.18)	25.9	(1.08)	41.6	(1.41)	29.9	(1.14)	30.3	(1.35)	35.1	(1.21)
Malta	22.8	(1.51)	34.4	(1.56)	10.5	(1.18)	12.9	(1.31)	14.0	(1.36)	15.8	(1.29)
Mexico	24.9	(1.09)	38.8	(1.27)	21.4	(1.04)	11.9	(0.71)	18.2	(0.93)	25.9	(1.12)
Norway	28.1	(1.19)	29.2	(1.04)	16.5	(0.93)	5.8	(0.57)	8.3	(0.75)	7.8	(0.63)
Poland	22.2	(0.90)	29.4	(1.28)	23.5	(0.94)	7.8	(0.57)	6.6	(0.58)	25.4	(1.01)
Portugal	24.2	(0.89)	50.0	(1.06)	17.4	(0.88)	18.2	(0.90)	17.0	(0.73)	8.5	(0.61)
Slovak Republic	14.8	(0.97)	20.1	(0.97)	19.2	(1.26)	4.8	(0.46)	4.6	(0.52)	7.9	(0.58)
Slovenia	25.1	(0.81)	40.4	(1.09)	32.0	(1.04)	7.0	(0.59)	9.9	(0.68)	21.1	(0.83)
Spain	26.2	(1.08)	35.8	(1.04)	18.3	(0.76)	14.2	(0.64)	17.5	(0.73)	12.0	(0.62)
Turkey	14.2	(0.85)	27.8	(1.70)	13.4	(1.44)	9.3	(0.78)	14.5	(1.10)	9.5	(1.16)
TALIS average	**24.7**	**(0.23)**	**31.3**	**(0.25)**	**21.4**	**(0.23)**	**9.7**	**(0.15)**	**13.9**	**(0.21)**	**16.7**	**(0.20)**

1. Index derived from aggregating the development need for each teacher over all of the aspects of their work: 3 points for a high level of need; 2 points for a moderate level of need, 1 point for a low level of need and no points for cases where teachers noted no development need at all. These were then aggregated and divided by the maximum possible score of 33 and multiplied by 100.

Source: OECD (2009), *Creating Effective Teaching and Learning Environments: First Results from TALIS.*

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Table A.12

Support for professional development undertaken by teachers (2007-08)

Percentage of those teachers of lower secondary education who undertook professional development and received the following types of support

	Teacher contribution to the cost of professional development undertaken						Teacher received scheduled time		Teacher received salary supplement	
	Paid none of the costs		Paid some of the costs		Paid all of the costs					
	%	(S.E.)	%	(S.E.)	%	(S.E.)	%	(S.E.)	%	(S.E.)
Australia	74.5	(1.24)	24.3	(1.24)	1.2	(0.26)	85.5	(0.86)	5.5	(0.57)
Austria	43.7	(1.00)	49.7	(1.01)	6.6	(0.45)	89.0	(0.72)	11.7	(0.68)
Belgium (Fl.)	81.4	(1.32)	15.3	(1.10)	3.2	(0.46)	78.1	(1.63)	2.2	(0.49)
Brazil	54.8	(1.59)	26.9	(1.36)	18.3	(1.22)	56.2	(1.67)	10.9	(0.88)
Bulgaria	73.4	(2.06)	20.5	(2.16)	6.1	(0.68)	40.4	(1.88)	8.1	(0.91)
Denmark	77.3	(1.45)	16.3	(1.13)	6.4	(0.93)	71.8	(2.34)	9.2	(1.64)
Estonia	72.5	(0.98)	25.6	(0.93)	2.0	(0.28)	64.2	(1.37)	12.0	(0.88)
Hungary	71.5	(1.99)	20.5	(1.76)	8.0	(0.76)	44.4	(2.95)	5.9	(0.85)
Iceland	67.8	(1.34)	27.8	(1.42)	4.5	(0.61)	70.3	(1.39)	17.9	(1.24)
Ireland	79.3	(1.03)	17.5	(0.99)	3.2	(0.46)	94.7	(0.53)	5.8	(0.67)
Italy	68.7	(1.04)	13.7	(0.65)	17.6	(0.78)	30.9	(1.38)	9.6	(0.74)
Korea	27.1	(1.07)	58.5	(1.06)	14.4	(0.79)	24.3	(0.94)	19.8	(1.02)
Lithuania	65.2	(1.75)	30.0	(1.48)	4.8	(0.57)	69.1	(1.26)	6.5	(0.58)
Malaysia	43.5	(1.52)	52.7	(1.54)	3.9	(0.38)	88.6	(0.80)	2.5	(0.31)
Malta	87.1	(1.29)	10.6	(1.18)	2.2	(0.51)	78.2	(1.62)	48.7	(1.94)
Mexico	43.2	(1.31)	38.0	(1.12)	18.8	(1.14)	71.1	(1.52)	2.9	(0.45)
Norway	79.8	(1.14)	17.0	(1.05)	3.3	(0.44)	66.3	(1.56)	7.2	(0.74)
Poland	44.2	(1.30)	45.1	(1.12)	10.7	(0.85)	57.0	(1.68)	5.4	(0.61)
Portugal	50.3	(1.43)	25.2	(1.14)	24.5	(1.24)	25.1	(1.68)	2.0	(0.33)
Slovak Republic	70.4	(1.37)	24.1	(1.21)	5.5	(0.57)	69.2	(1.47)	28.3	(1.72)
Slovenia	85.3	(0.91)	13.7	(0.87)	1.0	(0.22)	79.3	(1.28)	29.7	(1.18)
Spain	54.8	(1.33)	29.6	(1.00)	15.6	(0.87)	29.5	(1.48)	3.3	(0.41)
Turkey	82.9	(1.87)	12.1	(1.90)	5.0	(0.95)	61.2	(2.96)	6.9	(1.19)
TALIS average	**65.2**	**(0.29)**	**26.7**	**(0.27)**	**8.1**	**(0.15)**	**62.8**	**(0.34)**	**11.4**	**(0.20)**

Source: OECD (2009), *Creating Effective Teaching and Learning Environments: First Results from TALIS.*

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Table A.13

Frequency of mentoring and induction programmes (2007-08)

Percentage of teachers of lower secondary education whose school principal reported the existence of induction processes and mentoring programmes for teachers new to the school

	Existence of formal induction process in school						Existence of a mentoring programme or policy in school					
	Yes, for all teachers new to the school		Yes but only for those in their first teaching job		No formal induction process		Yes, for all teachers new to the school		Yes but only for those in their first teaching job		No formal mentoring process	
	%	(S.E.)	%	(S.E.)	%	(S.E.)	%	(S.E.)	%	(S.E.)	%	(S.E.)
Australia	93.1	(2.41)	5.6	(2.21)	1.3	(0.96)	70.4	(4.59)	23.8	(4.27)	5.8	(1.84)
Austria	32.1	(3.15)	23.6	(2.61)	44.3	(2.99)	23.0	(2.73)	23.0	(2.64)	54.1	(3.24)
Belgium (Fl.)	94.4	(1.69)	3.9	(1.21)	1.7	(1.08)	90.5	(2.08)	8.8	(2.02)	0.7	(0.49)
Brazil	19.8	(2.38)	6.5	(1.42)	73.7	(2.46)	17.7	(2.11)	11.7	(2.03)	70.7	(2.91)
Bulgaria	53.2	(4.94)	30.7	(6.13)	16.2	(3.85)	29.6	(3.95)	53.5	(4.87)	16.9	(3.51)
Denmark	47.7	(5.22)	23.5	(4.51)	28.8	(3.81)	62.6	(4.52)	27.0	(3.77)	10.4	(2.65)
Estonia	23.1	(3.68)	59.1	(4.19)	17.8	(3.14)	25.8	(3.49)	64.9	(3.81)	9.2	(1.98)
Hungary	34.8	(5.06)	46.4	(5.26)	18.8	(3.46)	44.8	(4.50)	44.2	(4.68)	11.0	(2.40)
Iceland	72.8	(0.17)	15.7	(0.13)	11.5	(0.12)	44.7	(0.17)	48.4	(0.16)	6.9	(0.04)
Ireland	83.7	(3.67)	7.2	(2.68)	9.0	(2.64)	63.8	(4.21)	10.7	(2.44)	25.5	(4.10)
Italy	36.6	(2.87)	34.4	(2.91)	29.0	(2.81)	26.3	(2.70)	61.3	(2.99)	12.4	(2.16)
Korea	33.6	(3.33)	49.8	(3.75)	16.6	(3.03)	26.8	(3.76)	44.3	(4.37)	29.0	(4.18)
Lithuania	17.1	(2.61)	14.0	(2.49)	68.9	(3.26)	29.0	(3.59)	50.6	(4.08)	20.4	(3.13)
Malaysia	43.0	(3.62)	40.9	(4.00)	16.2	(2.87)	45.0	(3.71)	38.1	(3.82)	16.9	(2.61)
Malta	25.3	(0.17)	11.8	(0.11)	62.9	(0.18)	22.4	(0.18)	12.3	(0.12)	65.3	(0.20)
Mexico	22.7	(3.35)	14.7	(2.91)	62.6	(3.94)	19.2	(3.47)	20.4	(3.52)	60.5	(4.14)
Norway	29.9	(3.83)	18.3	(3.25)	51.8	(4.27)	43.3	(3.85)	25.4	(3.67)	31.3	(3.67)
Poland	14.3	(3.13)	79.4	(3.63)	6.3	(2.15)	23.5	(3.97)	71.9	(4.32)	4.6	(1.87)
Portugal	73.1	(3.52)	4.2	(1.69)	22.7	(3.20)	41.3	(4.48)	20.4	(3.53)	38.3	(4.32)
Slovak Republic	62.1	(3.85)	35.5	(3.67)	2.4	(1.53)	26.4	(4.06)	71.3	(4.22)	2.4	(1.32)
Slovenia	41.1	(3.83)	51.5	(4.06)	7.4	(2.01)	23.5	(3.55)	64.6	(4.02)	11.9	(2.65)
Spain	20.9	(3.22)	15.7	(2.71)	63.4	(3.70)	17.6	(2.77)	18.1	(2.74)	64.3	(3.60)
Turkey	50.2	(5.27)	16.2	(4.04)	33.6	(5.10)	22.3	(4.85)	69.6	(5.51)	8.1	(3.22)
TALIS average	**44.5**	**(0.73)**	**26.5**	**(0.70)**	**29.0**	**(0.62)**	**36.5**	**(0.75)**	**38.4**	**(0.76)**	**25.1**	**(0.60)**

Source: OECD (2009), *Creating Effective Teaching and Learning Environments: First Results from TALIS.*

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Table A.14

Reasons for not participating in more professional development (2007-08)

Percentage of teachers of lower secondary education who wanted more professional development and gave the following reasons for not undertaking more

	Reason for not undertaking more professional development											
	Did not have the pre-requisites		Too expensive		Lack of employer support		Conflict with work schedule		Family responsibilities		No suitable professional development	
	%	(S.E.)	%	(S.E.)	%	(S.E.)	%	(S.E.)	%	(S.E.)	%	(S.E.)
Australia	3.2	(0.59)	32.6	(1.61)	26.5	(1.52)	61.7	(1.93)	27.6	(1.73)	40.5	(1.80)
Austria	2.6	(0.46)	18.0	(0.93)	9.3	(0.79)	41.5	(1.34)	29.0	(1.21)	64.2	(1.15)
Belgium (Fl.)	3.6	(0.86)	11.8	(1.33)	10.9	(1.40)	43.2	(1.69)	40.6	(1.70)	38.8	(1.73)
Brazil	5.1	(0.46)	51.0	(1.46)	24.6	(1.35)	57.8	(1.46)	18.4	(0.92)	27.0	(1.22)
Bulgaria	7.0	(1.61)	34.6	(2.41)	2.9	(0.47)	24.4	(1.46)	16.6	(1.22)	48.3	(2.35)
Denmark	1.8	(0.44)	29.6	(1.94)	38.3	(1.76)	23.7	(1.90)	15.4	(1.21)	42.1	(1.99)
Estonia	4.2	(0.62)	35.1	(1.59)	15.3	(1.30)	60.5	(1.65)	25.2	(1.35)	52.3	(1.61)
Hungary	5.6	(0.85)	46.9	(2.40)	23.0	(1.90)	40.3	(1.88)	24.5	(1.77)	25.9	(1.89)
Iceland	1.8	(0.70)	18.6	(1.61)	6.7	(1.18)	43.0	(2.41)	35.4	(1.99)	47.0	(2.36)
Ireland	5.5	(0.75)	12.2	(0.96)	13.9	(1.47)	42.6	(1.53)	29.4	(1.57)	45.2	(1.83)
Italy	5.1	(0.44)	23.5	(1.23)	5.8	(0.50)	43.1	(1.47)	40.8	(1.38)	47.2	(1.37)
Korea	11.9	(0.95)	19.9	(0.98)	8.7	(0.93)	73.3	(1.26)	32.7	(1.30)	42.2	(1.28)
Lithuania	7.7	(0.90)	25.7	(1.45)	15.9	(1.19)	46.7	(1.63)	26.4	(1.20)	53.2	(1.60)
Malaysia	28.4	(1.38)	22.2	(1.41)	13.7	(1.14)	58.9	(1.30)	31.3	(1.32)	45.9	(1.25)
Malta	4.7	(1.06)	18.4	(2.06)	10.2	(1.73)	38.8	(2.37)	45.4	(2.85)	40.5	(2.84)
Mexico	17.2	(1.07)	49.0	(1.44)	21.1	(1.01)	48.7	(1.31)	37.4	(1.29)	20.3	(0.97)
Norway	2.5	(0.38)	31.6	(1.36)	26.4	(1.79)	50.4	(1.44)	26.5	(1.37)	30.0	(1.36)
Poland	3.4	(0.51)	51.2	(1.72)	12.3	(1.20)	40.7	(1.90)	32.6	(1.63)	38.7	(1.84)
Portugal	6.5	(0.63)	36.3	(1.14)	10.4	(0.66)	65.5	(1.26)	35.6	(1.28)	48.2	(1.23)
Slovak Republic	9.5	(0.96)	18.8	(1.48)	12.8	(1.32)	38.2	(1.95)	20.6	(1.35)	58.0	(1.81)
Slovenia	3.7	(0.74)	35.9	(1.57)	18.2	(1.48)	47.8	(1.75)	22.3	(1.25)	32.6	(1.52)
Spain	6.7	(0.67)	19.2	(0.99)	6.3	(0.66)	50.3	(1.23)	48.4	(1.43)	38.4	(1.25)
Turkey	16.9	(2.03)	12.4	(1.48)	11.9	(1.51)	34.7	(3.47)	31.2	(2.68)	46.6	(2.22)
TALIS average	**7.2**	**(0.19)**	**28.5**	**(0.32)**	**15.0**	**(0.27)**	**46.8**	**(0.37)**	**30.1**	**(0.33)**	**42.3**	**(0.36)**

Source: OECD (2009), *Creating Effective Teaching and Learning Environments: First Results from TALIS.*
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Table A.15

Impact of different types of professional development undertaken by teachers (2007-08)

Percentage of teachers of lower secondary education reporting that the professional development undertaken in the previous 18 months had a moderate or high impact upon their development as teachers

	Courses and workshops		Education conferences and seminars		Qualification programmes		Observation visits to other schools		Professional development network		Individual and collaborative research		Mentoring and peer observation		Reading professional literature		Informal dialogue to improve teaching	
	%	(S.E.)	%	(S.E.)	%	(S.E.)	%	(S.E.)	%	(S.E.)	%	(S.E.)	%	(S.E.)	%	(S.E.)	%	(S.E.)
Australia	78.5	(1.04)	67.6	(1.32)	78.6	(2.67)	72.2	(2.26)	73.5	(1.27)	85.8	(1.53)	72.5	(1.40)	66.4	(1.28)	86.0	(0.85)
Austria	75.7	(0.89)	55.5	(1.24)	89.0	(1.21)	61.0	(2.99)	68.6	(1.33)	88.4	(0.96)	72.7	(1.63)	82.4	(0.69)	84.9	(0.71)
Belgium (Fl.)	52.9	(1.26)	42.6	(1.82)	67.0	(2.01)	47.0	(2.84)	53.9	(1.92)	67.6	(1.52)	48.1	(2.64)	57.8	(1.20)	71.7	(1.05)
Brazil	76.1	(1.07)	72.9	(1.32)	89.9	(0.93)	67.5	(1.49)	73.4	(1.91)	80.9	(1.26)	65.8	(1.66)	82.6	(1.09)	76.5	(0.99)
Bulgaria	84.2	(1.58)	80.6	(1.67)	88.0	(2.06)	79.3	(3.00)	86.2	(1.83)	87.1	(1.70)	86.0	(1.68)	92.3	(1.21)	86.3	(1.20)
Denmark	86.0	(0.96)	82.9	(1.70)	96.8	(1.18)	83.6	(3.34)	88.1	(1.32)	94.6	(0.86)	78.7	(3.45)	84.9	(1.14)	92.8	(0.89)
Estonia	86.4	(0.74)	70.4	(1.52)	90.4	(0.99)	69.9	(1.27)	84.3	(1.06)	90.5	(1.04)	76.8	(1.58)	87.3	(0.70)	81.8	(0.94)
Hungary	86.0	(1.04)	78.2	(1.46)	93.1	(0.93)	81.4	(1.74)	84.8	(1.11)	93.8	(1.30)	91.1	(1.00)	92.6	(0.78)	92.9	(0.89)
Iceland	83.0	(1.13)	73.7	(1.75)	92.4	(1.76)	80.5	(1.37)	90.6	(0.85)	94.2	(1.70)	77.8	(2.09)	88.7	(0.97)	91.8	(0.85)
Ireland	81.9	(0.96)	74.5	(1.55)	92.5	(1.53)	81.0	(4.35)	78.7	(1.36)	86.8	(1.41)	71.3	(2.81)	71.0	(1.55)	83.0	(1.00)
Italy	81.9	(1.17)	78.5	(1.16)	86.8	(1.58)	82.6	(2.06)	86.6	(1.06)	95.1	(0.45)	89.6	(1.03)	90.9	(0.60)	90.6	(0.47)
Korea	79.2	(0.87)	75.1	(1.36)	84.2	(1.37)	65.2	(1.15)	85.4	(1.01)	89.9	(0.82)	69.5	(1.17)	77.4	(1.22)	85.8	(0.67)
Lithuania	91.4	(0.62)	83.2	(1.03)	88.2	(1.26)	90.7	(0.81)	90.0	(0.94)	91.4	(0.78)	85.2	(1.24)	96.2	(0.41)	92.0	(0.64)
Malaysia	94.4	(0.48)	89.1	(1.05)	95.0	(0.88)	87.6	(1.30)	90.3	(0.97)	88.8	(1.17)	89.9	(0.89)	86.4	(0.78)	92.2	(0.49)
Malta	73.9	(1.65)	70.0	(2.47)	94.4	(1.56)	69.8	(3.87)	75.2	(2.45)	89.8	(1.57)	67.8	(3.78)	78.1	(1.83)	84.3	(1.29)
Mexico	85.4	(0.77)	82.2	(1.54)	91.3	(1.03)	77.7	(1.65)	81.3	(1.69)	91.0	(0.69)	78.3	(1.59)	84.0	(0.98)	81.6	(0.92)
Norway	79.3	(0.96)	73.7	(1.46)	93.7	(1.24)	71.9	(2.39)	81.1	(1.83)	95.3	(1.39)	77.9	(2.62)	78.1	(0.93)	95.7	(0.44)
Poland	86.3	(0.73)	75.8	(1.31)	92.1	(0.97)	78.2	(2.29)	88.3	(0.91)	92.8	(0.90)	77.9	(1.11)	93.4	(0.49)	90.0	(0.70)
Portugal	82.8	(0.88)	73.0	(1.38)	87.0	(1.12)	67.4	(1.82)	80.7	(2.04)	94.0	(0.76)	87.6	(1.84)	78.9	(1.04)	88.1	(0.68)
Slovak Republic	75.5	(1.57)	75.9	(1.44)	83.0	(1.43)	66.0	(2.02)	78.0	(1.93)	83.8	(3.72)	78.6	(1.10)	88.8	(1.03)	85.9	(0.85)
Slovenia	83.3	(0.73)	78.6	(0.91)	80.2	(2.43)	77.3	(2.74)	64.1	(1.30)	89.9	(1.44)	76.1	(1.53)	81.5	(0.85)	87.0	(0.74)
Spain	76.5	(0.94)	71.8	(1.75)	73.1	(1.97)	76.2	(2.31)	81.5	(1.49)	89.9	(0.89)	81.1	(1.49)	74.4	(1.01)	80.2	(0.74)
Turkey	72.9	(1.78)	74.1	(1.65)	79.3	(3.77)	87.8	(1.99)	80.5	(1.43)	92.3	(2.11)	84.8	(1.77)	91.3	(1.17)	92.8	(1.01)
TALIS average	**80.6**	**(0.23)**	**73.9**	**(0.31)**	**87.2**	**(0.35)**	**74.9**	**(0.50)**	**80.2**	**(0.31)**	**89.3**	**(0.30)**	**77.6**	**(0.41)**	**82.8**	**(0.22)**	**86.7**	**(0.18)**

Source: OECD (2009), *Creating Effective Teaching and Learning Environments: First Results from TALIS.*
StatLink http://dx.doi.org/10.1787/607807256201

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Building a High-Quality Teaching Profession

LESSONS FROM AROUND THE WORLD

This report presents the best current evidence about what can make teacher-oriented reforms effective. It points to examples of reforms that have produced specific results, show promise or illustrate imaginative ways of implementing change.

A striking contrast between the teaching profession in different countries is its status and the caliber of its recruits. Successful countries have shown how a teaching profession that assumes a high level of responsibility and is well rewarded can attract some of the best graduates into a teaching career.

This publication summarizes the evidence that underpinned the first International Summit on the Teaching Profession held in New York in March 2011 and reflects on the lessons that have been learned. The promising avenues it explores not only include measures at recruitment stage, they also involve transforming the teaching profession from within.

Contents

Chapter 1. Recruitment and initial preparation of teachers
Chapter 2. Teacher development, support, employment conditions and careers
Chapter 3. Teacher evaluation and compensation
Chapter 4. Teacher engagement in education reform

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