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Schooling: Investments, Organisation and Learners



There have been major investments in schooling across OECD countries, including in teacher salaries. Shared patterns exist alongside notable differences such as in teacher beliefs (as charted with the Teaching and Learning International Survey [TALIS]) and in school time use. OECD work has analysed the characteristics of learners and learning, teachers, and how to improve school leadership. The analytical work undertaken for the annual International Summit on the Teaching Profession recognises the key role of teachers for the success of schooling and educational change. PISA studies have permitted specific analyses of aspects of schooling, such as student attitudes towards and knowledge of the environment. Work on the educational role of technology has shown how important is home use for educational outcomes. Policy orientations on schooling have stressed the need to professionalise and innovate, calling for reforms directed at effective learning to be placed at the core of schooling, rather than changing only structures and administrative systems. The OECD continues to analyse and stress the value of good school design and safe buildings.



INTRODUCTION

The period of compulsory education – primary, lower secondary and even the upper secondary cycle in some countries – is at the core of all education systems. Over recent years, there have been significant investments in this core phase of education, recognised as fundamental for laying the foundation on which so many other social, economic and educational outcomes may follow. OECD work has therefore analysed with growing precision the characteristics of learners, teachers and the nature of school practices, including leadership.

Teachers (and the educational workforce in general) are widely recognised as central to the success of schooling and their role in educational change; a position that is endorsed by the work of the OECD and in recent years most prominently through the analytical work undertaken in support of the annual “International Summit on the Teaching Profession” (i.e. OECD 2011 and OECD 2012). *Improving School Leadership* has provided in-depth analyses of different approaches to school leadership as well as practical guidelines for improvement.

The Teaching and Learning International Survey (TALIS) in 2008 was based on the experience of some 90 000 lower secondary teachers and school principals in 23 countries; first results were published in 2009. The second cycle of TALIS will be conducted in 2013 in which countries will have the option to expand the survey to primary and upper secondary schools. The OECD triennial Programme for International Student Assessment (PISA) surveys, in 2009 conducted in 65 countries and economies worldwide, rising to 72 in 2012, have permitted focused analyses of schooling, ranging from the attitudes and awareness of students, through features of the learning environment, to the allocation of resources. The work of the Centre for Educational Research and Innovation (CERI) on, for instance, learning environments and on the use of technology in education has offered a complementary set of international studies on aspects of schooling. The Centre for Effective Learning Environments (CELE) has continued to identify how best to design and deliver safe, healthy and high-quality educational facilities.

KEY FINDINGS

Only a small minority of students in OECD and partner countries do not complete compulsory education: Participation in education tends to be high in most OECD countries and partner countries until the end of compulsory education, with more than 90% completing this phase in most. Those where more than 10% do not complete the end of compulsory education are: Australia, Belgium, Chile, Germany, Hungary, Israel, Mexico, the Netherlands, Turkey and the United States, and among the partner countries with data available Argentina, Brazil, Indonesia and the Russian Federation. The age which marks the end of compulsory attendance, however, is relatively late in 10 of these 14 OECD countries and partner countries at 17 or 18 years of age [the exceptions being Mexico (15 years of age) and Turkey (14 years of age)], for the partner country Indonesia (15 years of age)].

 *Education at a Glance 2012: OECD Indicators, 2012, Indicator C1*



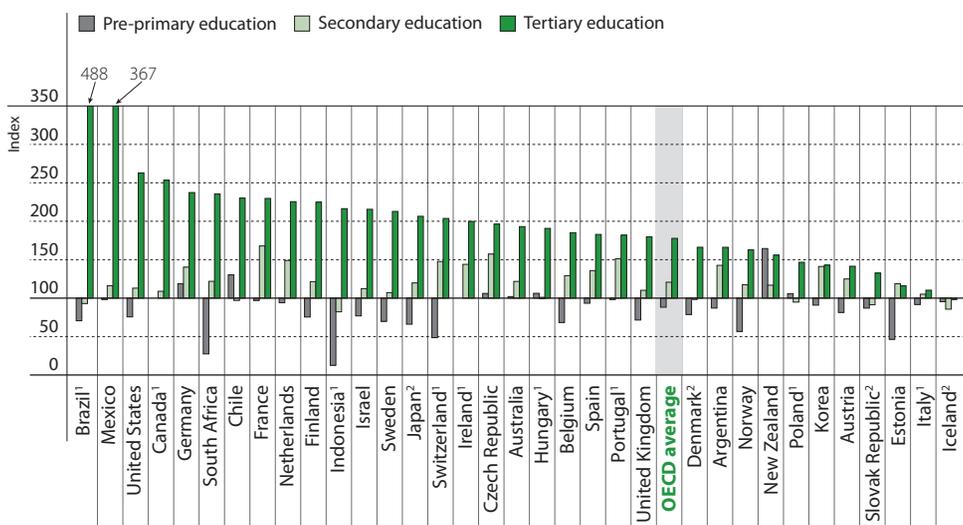
Spending per student in schooling (plus post-secondary non-tertiary) has increased everywhere in OECD countries since 2000, contrasting with a mixed picture in tertiary education: Using 100 as the index for spending per school student in 2005, this indicator of change had risen to 115 by 2009 in OECD countries, well up from the OECD average 74 in 2000. (This compares with 109 for spending per tertiary education student in 2009 compared with 2005 levels, with the index falling over this time in several countries.) Even in only the short period since 2005, the rise in spending per school student was very marked in some countries, with the index reaching 148 in the Slovak Republic and among partner countries, 166 in Brazil and 158 in the Russian Federation.

 *Education at a Glance 2012: OECD Indicators, 2012, Indicator B1*

Figure 2.1.

Relative expenditure per student by educational institutions for all services at different levels of education (2009)

Primary education = 100



Notes: A ratio of 300 for tertiary education means that expenditure per tertiary student by educational institutions is three times the expenditure per primary student by educational institutions.

A ratio of 50 for pre-primary education means that expenditure per pre-primary pupil by educational institutions is half the expenditure per primary student by educational institutions.

1. Public institutions only.

2. Some levels of education are included with others. Refer to "x" code in Table B1.1a for details.

Countries are ranked in descending order of expenditure per student by educational institutions in tertiary education relative to primary education.

Source: OECD (2012), *Education at a Glance 2012: OECD Indicators*, OECD Publishing. Argentina, Indonesia: UNESCO Institute for Statistics (World Education Indicators programme). South Africa: UNESCO Institute for Statistics. Table B1.1a. See Annex 3 for notes (www.oecd.org/edu/eag2012).

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Expenditure by educational institutions on each student rises with the level of education in almost all OECD countries: The expenditure per student at the secondary level is on average 1.2 times greater than at the primary level. This ratio exceeds 1.5 in the Czech Republic, France and Portugal. Educational institutions in OECD countries spend, on average, 1.8 times more per tertiary student than for each primary pupil, but patterns vary widely. For example, Austria, Estonia, Iceland, Italy, Korea, Poland and the Slovak Republic spend less than 1.5 times on a tertiary student than on a primary pupil, while Mexico spends three times as much or even more.

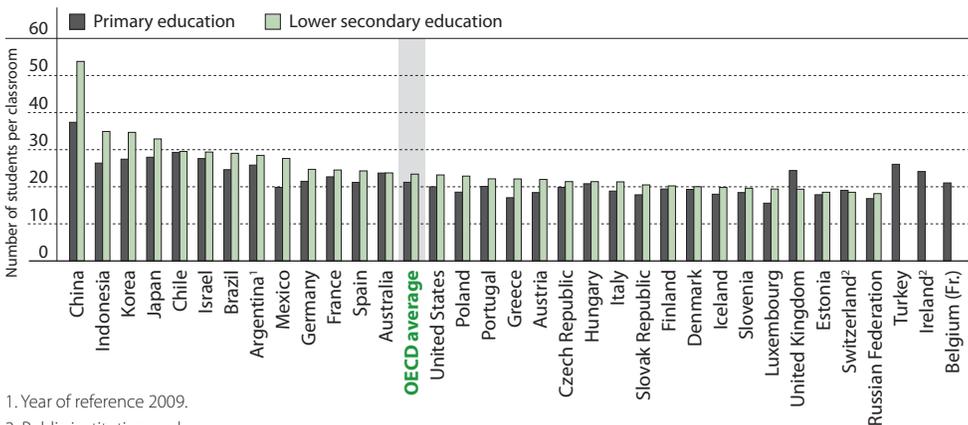
Education at a Glance 2012: OECD Indicators, 2012, Indicator B1

In most systems, there are more students in lower secondary classes than in primary classes: At the lower secondary level the average class in OECD countries has more than 23 students compared to 21 students at the primary level. In Greece, Japan, Korea, Mexico and Poland, the average class has four more or greater students in lower secondary schools compared with primary schools. The exceptions to the general pattern are the United Kingdom and, to a lesser extent, Switzerland. Class sizes vary considerably among countries. For example, at the lower secondary level, class sizes of 20 or fewer in Denmark, Estonia, Finland, Iceland, Luxembourg, Slovenia, Switzerland (public institutions) and the United Kingdom, and partner country the Russian Federation, compared with more than 34 per class in Korea, and over 50 in partner country China.

Education at a Glance 2012: OECD Indicators, 2012, Indicator D2

Figure 2.2.

Average class size in primary and secondary education (2010)



1. Year of reference 2009.

2. Public institutions only.

Countries are ranked in descending order of average class size in lower secondary education.

Source: OECD (2012), *Education at a Glance 2012: OECD Indicators*, OECD Publishing. Argentina, China, Indonesia: UNESCO Institute for Statistics (World Education Indicators programme). Table D2.1. See Annex 3 for notes (www.oecd.org/edu/eag2012).

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In most OECD countries teachers' salaries in primary and secondary education increased in real terms between 2000 and 2010: Between 2000 and 2010, teachers' salaries in primary, lower secondary and upper secondary increased in real terms in most OECD countries. In Denmark, Estonia, Ireland, Portugal and Scotland salaries increased at all three levels of education by at least 20%. In the Czech Republic (primary and lower secondary levels) and in Turkey salaries doubled over the past decade. Only in France and Japan among those with data did teachers' salaries decrease in real terms by more than 5%. Mostly, salaries increased less since 2005. The exceptions to this pattern are Denmark, Estonia, Israel (primary and lower secondary levels), the Netherlands (lower secondary level) and New Zealand, where most of the increase in teachers' salaries occurred after 2005.

 *Education at a Glance 2012: OECD Indicators, 2012, Indicator D3*

Some countries use a "career-based" model of teacher employment and others a "position-based" model, each with its own strengths and weaknesses: In "career-based" systems, teachers expect to stay long in the public service after early entry and once recruited are allocated to posts according to internal rules (e.g. France, Japan, Korea and Spain). These systems tend to avoid problems of teacher shortages but with concerns about how far teacher education is connected to school and student needs, and with lack of incentives for continued professional development and of responsiveness to local needs. "Position-based" systems instead tend to select the "best" candidate for each position, whether by external recruitment or internal promotion, with wider access to the profession in terms of age or previous career experience (e.g. Canada, Sweden, Switzerland and the United Kingdom). The problems typically encountered in these systems are teacher shortages, especially in mathematics, sciences, etc., difficulties in ensuring a core of good older teachers, and wider teacher quality gaps between attractive and unattractive districts/schools.

 *Teachers Matter: Attracting, Developing and Retaining Effective Teachers, 2005, Executive Summary*

Substantial differences exist between countries in teacher beliefs about how teaching should be delivered: In most countries teachers see their job as helping students actively to develop and construct their knowledge rather than concentrate on transmitting content only (among the TALIS countries, the exception is Italy where only a minority endorses this view). A clear majority of teachers support a constructivist approach in Australia, Korea, North-Western Europe and Scandinavia, whereas belief in direct transmission is much more in evidence in Malaysia, South America and Southern Europe. Teachers in Eastern Europe lie in between in the balance of teachers having mainly constructivist or mainly transmission beliefs.

 *Creating Effective Teaching and Learning Environments: First Results from TALIS, 2009, Chapter 4 and Executive Summary*



TALIS data permit analysis of the teaching practices and teachers' participation in professional learning communities to show:

- **High-quality instruction is reflected in the use of a variety of classroom teaching practices, allowing for both teacher-directed and self-regulated learning.** Although the use of a variety of classroom teaching practices is seen in every country examined, only a minority of teachers reports a comparatively diverse and frequent use of different classroom teaching practices during lessons.
- **Few teachers belong to a 'professional learning community'.** TALIS data show that whereas in many countries basic forms of co-operation among staff are common, participation in reflective inquiry and collaboration, where teachers work together on the core of their professional activities, are much less common.
- **Teachers who use more diverse teaching practices and who participate more actively in professional learning communities report higher levels of self-efficacy, and receive more feedback and appraisal on their teaching,** as well as being more involved in professional development activities outside school.
- **Participation by teachers in co-operative practices is more frequent in larger schools.** While teachers in smaller schools were on average more likely to show more frequent use of different teaching practices during lessons, participation in co-operative practices like teachers observing each other, giving feedback, and acting as a mentor, advisor or specialist is more frequent in larger schools.
- **Longer working hours are associated with frequent use of different teaching practices during lessons, and with participation in co-operative practices,** suggesting that high-quality teaching and intensive forms of co-operative professional learning can be time-consuming.

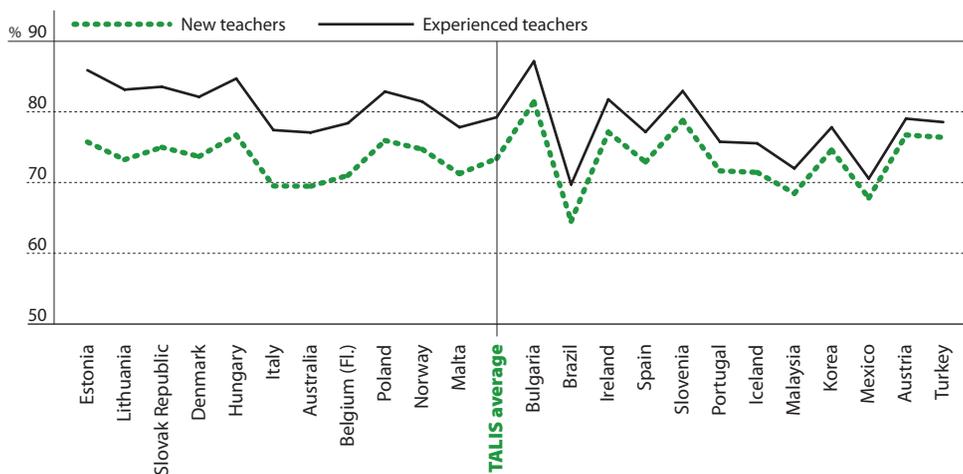
 *Teaching Practices and Pedagogical Innovation: Evidence from TALIS, 2012, Chapter 6*

Teachers are positive about the appraisal and feedback they receive, but in some countries a significant minority or even majority of teachers have not received any in recent years: Teachers across the different systems surveyed by TALIS tend to be positive about the appraisal and feedback they receive, reporting that on the whole it is fair and helpful for their work, and increases their job satisfaction. Approximately 13% of teachers surveyed by TALIS reported that they had received no feedback or evaluation in their current school in the previous five years; this average level rises to much higher levels in Ireland (26%), Italy (55%), Portugal (26%) and Spain (46%).

 *Creating Effective Teaching and Learning Environments: First Results from TALIS, 2009, Chapter 5 and Executive Summary*



Figure 2.3.
Proportion of class time spent teaching and learning,
by new and experienced teachers (2008)



Countries are ranked in descending order based on the difference in the time reported by new teachers and experienced teachers for actual teaching and learning.

Note: All countries in this figure show statistically significant differences between new and experienced teachers.

Source: OECD, Teaching And Learning International Survey 2008.

StatLink  <http://dx.doi.org/10.1787/888932577897>

New lower secondary teachers spend a smaller proportion of their time teaching than their more experienced peers: Among the teachers surveyed by TALIS on average, about three-quarters of new teachers’ classroom time is spent on actual teaching and learning with a small gap between new teachers and experienced teachers. The main reason for this small gap in lost class time is the greater percentage of class time that new teachers spent on keeping order in the classroom. On average, new teachers spent slightly more time on lesson planning and slightly less time teaching students and performing administrative duties, but the magnitude of these differences is small in most countries.

 *The Experience from New Teachers: Results from TALIS 2008, 2012, Chapters 2 and 5 and Executive Summary*

High proportions of lower secondary teachers participate in professional development but many say that they would like more: Nearly 9 in 10 teachers surveyed by TALIS reported having taken part in a structured professional development activity in the preceding 18 months, though in Denmark, the Slovak Republic and Turkey around a quarter reported no participation during that period. Despite generally high levels of participation, more than half the teachers (55%) in the TALIS countries overall say that they would have liked more professional development, and lack of suitable opportunities is a significant factor in this.



Approximately a third of the surveyed teachers reported a high level of need for training to help them teach students with special learning needs. Other professional development priorities include teaching with ICT and dealing with difficult student behaviour.

 *Creating Effective Teaching and Learning Environments: First Results from TALIS, 2009, Chapter 3 and Executive Summary*

High “intended instruction hours” for those in school between the ages of 7 and 14 years-old bear no obvious association with higher academic performance at age 15: “Intended instruction hours” covers the compulsory and non-compulsory time when schools must offer teaching to school students (actual hours may vary from this, with variations too by region or type of school). Students in OECD countries are expected on average to receive an average of 6 862 hours of instruction between the ages of 7 and 14, and most of that is compulsory. Requirements vary widely among OECD countries, from 5 644 hours in Estonia to 8 664 hours in Chile (Estonia thus requires less than two-thirds instruction time compared with Chile). This while Estonia performs well on PISA, and two countries that perform particularly well – Korea and Finland – also have relatively low intended instruction hours at 5 908 and 5 753, respectively.

 *Education at a Glance 2012: OECD Indicators, 2012, Indicator D1*

High performance is associated with high relative time in regular lessons and moderate absolute time: The relative balance spent in regular as opposed to out-of-school learning seems to be particularly influential. In high-performing countries, the largest proportion of students’ learning time (70% to 80%) happens within regular school lessons, whereas in low-performing countries, half or more of students’ learning time occurs outside regular lessons. Longer hours do not by themselves bestow an advantage as in many countries long hours in regular mathematics lessons is actually associated with lower performance compared with moderate hours. As exceptions, in Korea and the partner economies Chinese Taipei and Hong Kong-China, those spending long hours learning mathematics in regular lessons perform significantly better in this subject than other students.

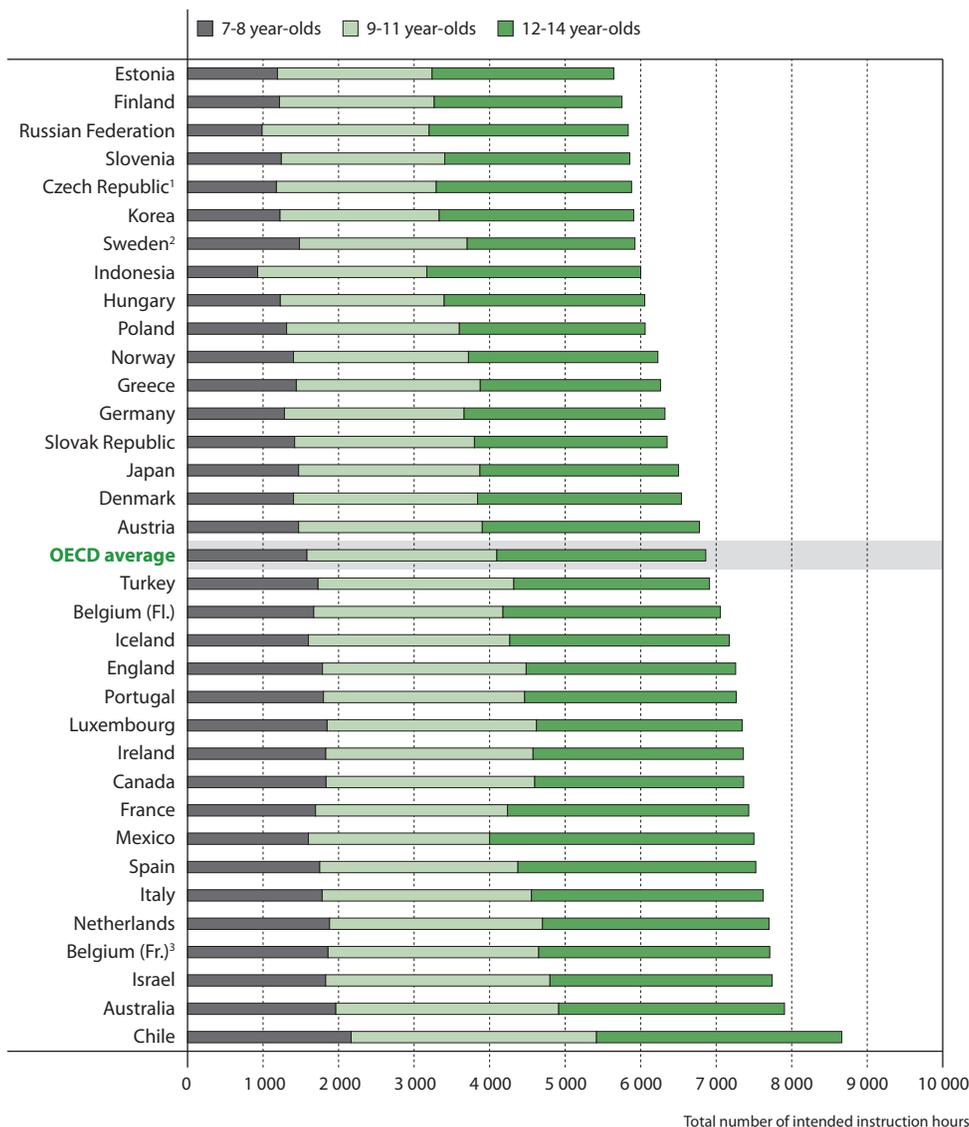
 *Quality Time for Students: Learning In and Out of School, 2011, Chapter 4*

School leadership is pivotal for the quality of schooling through creating the right organisational and educational conditions for effectiveness and improvement: A large body of research evidence on school effectiveness and improvement consistently highlights the pivotal role of leadership. It is nevertheless a complex role as leaders largely work outside the classrooms where teaching and learning takes place. Hence, instead of shaping quality directly, leaders do so by creating the right conditions for good teaching and learning through such factors as professional motivations, capacities and working environments. They are especially influential as regards four key dimensions: improving teacher quality; goal-setting, assessment and accountability; strategic resource management; and collaboration with external partners.

 *Improving School Leadership: Volume 1: Policy and Practice, 2008, Chapter 1*



Figure 2.4.
Total number of intended instruction hours in public institutions
between the ages of 7 and 14 (2010)



1. Minimum number of hours per year.

2. Estimated because breakdown by age is not available.

3. "12-14 year-olds" covers ages 12-13 only.

Countries are ranked in ascending order of the total number of intended instruction hours.

Source: OECD (2012), *Education at a Glance 2012: OECD Indicators*, OECD Publishing, Table D1.1. See Annex 3 for notes (www.oecd.org/edu/eag2012).



PISA data permit the analysis of computer use in schools and at home, and how these relate to educational performance. Based on the 2009 survey data, some key findings to emerge are:

- **All students in OECD countries are now familiar with computers:** less than 1% of 15-year-old students in OECD countries declared that they had never used a computer.
- **Frequent use of computers at home is not matched by equivalent use at school:** The OECD average for 15-year-olds reporting using computers at home is 93%, compared with only 71% reporting their use in school. This indicates that the adoption of ICT for learning in schools has not kept pace with the use of ICT at home. As most students have access to a computer at school, the low level of ICT use at school most likely indicates that ICT has not yet been fully integrated into pedagogical practices.
- **There is a stronger correlation between educational performance and computer use at home than with its use in school:** In most countries, computer use at home tends to be greater than its use at school. In every country, students reporting “rare” or “no use” of computers at home score lower than their counterparts who report frequent use. But in school, more intensive computer use is not associated with better results.
- **Computer use at home is positively associated with higher navigation skills and digital reading performance, while the computer use at school is not:** After accounting for students’ academic abilities, the frequency of computer use at home, particularly computer use for leisure, is positively associated with navigation skills and digital reading performance, while the frequency of computer use at school is not. These findings suggest that students are developing digital reading literacy mainly by using computers at home to pursue their interests



PISA Results 2009: Students On Line: Digital Technologies and Performance, 2011, Executive Summary

Some countries persist with repetition of school years as common practice despite its cost – to individuals and the system alike: Among OECD countries 13% of 15-year-olds repeat at least one year either in primary or secondary school. This proportion is particularly high in France, Luxembourg, Spain, Portugal and Belgium, where it affects over 30% of students. The financial costs of grade repetition are large for both the individuals and society. Its direct costs for the school systems are very high, as they include providing an additional year of education and delaying entry into the labour market by a year: the full economic cost is up to USD 20 000 equivalent for each student who repeats a year. In Belgium, the Netherlands, Portugal and Spain the direct costs of grade repetition account for more than 8% of the annual expenditure on primary and secondary education. Schools themselves have few incentives to take into account the costs involved.



Equity and Quality in Education: Supporting Disadvantaged Students and Schools, 2012, Chapter 2; No More Failures: Ten Steps to Equity in Education, 2007, Chapter 4



PISA shows that awareness of effective learning strategies is closely associated with student proficiency in reading: PISA 2009 asked students to self-report the extent to which they are aware of effective strategies to understand and summarise information. Across OECD countries, the difference in reading performance between those students who know the most about which strategies are best for summarising information and those who know the least is 107 score points. These findings underline the importance for parents, teachers and schools to provide students with the support and tools to become effective readers and learners.

 *PISA 2009 Results: Learning to Learn: Student Engagement, Strategies and Practices, 2010, Chapter 2 and Policy Implications*

Fifteen-year-olds across the world report their strong interest in environmental issues and identify their schooling as the most important source of knowledge about the environment: Students across the world report their strong interest in issues related to the environment. They also cite school – particularly but not only in their geography and science lessons – as the place where they learn most about the environment. Student awareness of environmental issues tends to go hand in hand with their measured level of scientific knowledge and proficiency. On the other hand, those with lower proficiency levels in environmental science tend to be more optimistic that the environment will improve in the future highlighting the important role that education can play in raising awareness.

 *Green at Fifteen? How 15-Year-Olds Perform in Environmental Science and Geoscience in PISA 2006, 2009, Chapters 3 and 4*

Certain countries strongly maintain the public nature of schooling by accepting neither private provision nor homeschooling: Most OECD countries report that independent (not government-dependent) private schools are permitted in their system, even if the number of students involved is usually relatively small. However, they are not permitted in the Czech Republic, Finland, the Slovak Republic and Sweden, and for the lower secondary level in Korea, too. Homeschooling is also an option in many countries, albeit under certain conditions, but is not allowed in Germany, Greece, Japan, Korea, Mexico, Spain and partner country Brazil, and not at the lower secondary level in the Czech Republic and Slovak Republic.

 *Education at a Glance 2010: OECD Indicators, 2010, Indicator D5*

In OECD and non-OECD G20 countries, primary and secondary education is mostly provided by public institutions: On average, 90% of primary education students in OECD countries are enrolled in public schools. The proportion is slightly smaller in secondary education, with 86% of lower secondary students and 81% of upper secondary students taught in public schools. Public and government-dependent institutions combined enrol 97% of students at the lower secondary level and 95% at the secondary level. These percentages vary widely among countries however. For example, in Indonesia 36% of lower secondary students and 50% of upper secondary students are enrolled in independent private schools.

 *Education at a Glance 2012: OECD Indicators, 2012, Indicator C1*



POLICY DIRECTIONS

TALIS 2008 analysis suggests the following policy implications regarding new and experienced lower secondary teachers:

- **Greater job differentiation between new and experienced teachers would improve effective teaching and learning within schools.** Reducing teaching responsibilities for new teachers would provide more time for them to develop their teaching skills at the beginning of their careers and increase effective teaching and learning in schools.
- **Appraisal and feedback are considered to be beneficial by new teachers and important for improving their teaching.** Appraisal and feedback also impact positively on job satisfaction and the sense of job security among new teachers. Constructive feedback needs to be maintained so that as current new teachers mature in the profession, their job satisfaction and development needs will be met.
- **There is a need to increase the intensity of mentoring and induction programmes and ensure that these provide the much needed constructive feedback.** Mentoring and induction programmes in their current forms do not provide sufficient feedback that new teachers say they need. The evidence also shows that the greater the frequency of mentoring programmes, the greater their impact on student outcomes.
- **New teachers need support and development to improve their classroom management practices.** TALIS showed that the practical skills of classroom management and dealing with problems of student discipline are identified by new teachers as difficult issues for them.

 *The Experience from New Teachers: Results from TALIS 2008, 2012, Chapter 6*

The quality of school leadership needs to be enhanced and it needs to be made sustainable. Four main policy levers, taken together, can improve school leadership practice:

- **Redefine school leadership responsibilities:** Leaders need to exercise a significant degree of autonomy if they are to influence quality, and policy should ensure that they have this. Policy should encourage leaders to: support, evaluate and develop teacher quality; engage in goal-setting and organisational evaluation; enhance strategic financial and human resource management; and operate more widely than within the confines of the school itself.
- **Distribute school leadership:** Leadership is strengthened, not weakened, if the responsibilities of school principals are shared effectively with other middle management and school professionals, and with school boards; policy should support and enable this to happen.
- **Develop skills for effective school leadership:** School leadership demands specific advanced competences that explicitly need development. Leadership development should contribute to the different career stages so policies should distinguish between



preparation for leadership, induction programmes, and adequate in-service opportunities adapted to need and context. This career focus will also enhance attractiveness (next point).

- **Make school leadership an attractive profession:** Ensuring that the procedures for recruiting the key personnel of school leadership are highly professionalised is one important route to enhancing attractiveness. Another is to establish salaries at levels commensurate with workloads and responsibilities, compared with classroom teachers and those in other professions, and linked to local factors which influence attractiveness.

 *Improving School Leadership: Volume 1: Policy and Practice, 2008, Executive Summary; Improving School Leadership: The Toolkit, 2010*

School leaders can make a difference in school and student performance if they are granted the autonomy to make important decisions: School leaders need to be able to adapt teaching programs to local needs, promote teamwork among teachers, and engage in teacher monitoring, evaluation and professional development. They need discretion in setting strategic direction and must be able to develop school plans and goals and monitor progress, using data to improve practice. They also need to be able to influence teacher recruitment to improve the match between candidates and their school's needs. In addition, leadership preparation and training are central and building networks of schools to stimulate and spread innovation and to develop diverse curricula, extended services and professional support can bring substantial benefits.

 *Preparing Teachers and Developing School Leaders for the 21st Century: Lessons from around the World, 2012, Chapter 1*

The recent analysis of educational technology use by 15-year-olds and its relationship to achievement levels resulted in a number of policy recommendations. These include:

- **Raise awareness among educators, parents and policy makers of the consequences of increasing ICT familiarity:** Policy makers should recognise that students need technology and access to digital media for learning in 21st century societies. Teachers and the teacher education sector need to hear this clear policy message, as do parents that they also have a crucial responsibility in developing responsible attitudes to using digital media.
- **Identify and foster the development of 21st century skills and competences:** The skills and competences required by a knowledge economy are either supported or enhanced by ICT. Policy authorities should identify and conceptualise the required competence set so as to incorporate them into the educational standards that students should meet by the end of compulsory schooling.
- **Adopt holistic policy approaches to ICT in education:** Many countries have not developed holistic policies for the educational use of ICT. An overall favourable environment, the inclusion of ICT in curriculum design, and strong leadership and commitment from teachers and principals to implement ICT-rich teaching all significantly influence the use



of ICT in schools. Current policies and their results should be critically evaluated within such a holistic framework.

- **Adapt school learning environments as computer ratios improve and digital learning resources increase:** Students should be able to locate and use a computer at any time, depending on their specific individual and team assignments. Governments should provide the conditions for innovations to flourish and should assess their effects.
- **Promote greater computer use at school and experimental research on its effects:** The positive gains from computer use at home derive in part because its frequency has passed a critical threshold; it is far above the relatively marginal use often experienced at school. Governments need to create the necessary incentives for teachers to engage with ICT sufficiently that its benefits can be realised, and they should support the creation of the evidence base of “what works”.

 *Are the New Millennium Learners Making the Grade? Technology Use and Educational Performance in PISA, 2010, Chapter 5 and Executive Summary*

Leading researchers from Europe and North America have summarised large bodies of research on learning in such a way as to be relevant to educational leaders and policy makers. The transversal conclusions that emerge suggest that to be most effective a learning environment should adhere to the following “principles” and that ideally all should be present:

- **Recognise the learners as its core participants**, encourage their active engagement and develop in them an understanding of their own activity as learners.
- **Be founded on the social nature of learning** and actively encourage well-organised co-operative learning.
- Engage learning professionals who are highly **attuned to the learners’ motivations and the key role of emotions** in achievement.
- **Be acutely sensitive to the individual differences** among the learners, including their prior knowledge.
- Devise programmes that **demand hard work and challenge from all without excessive overload.**
- Operate with clarity of expectations, **use assessment strategies consistent with these expectations**, and give strong emphasis on formative feedback.
- **Strongly promote “horizontal connectedness”** across areas of knowledge and subjects, as well as to the community and the wider world.

 *The Nature of Learning: Using Research to Inspire Practice, 2010, Chapter 13 and Executive Summary*

A recent study on the governance of complex education systems revealed that a growing number of OECD countries are moving towards augmenting school accountability measures based on test scores (school performance accountability) with measures involving



multiple stakeholders (e.g. parents, students, etc). The study allowed for drawing some key recommendations to make multiple stakeholder accountability in schools work:

- **It is important to identify the right stakeholders:** The process of stakeholder identification can be heavily influenced by “stakeholder salience”, that is, the ability of stakeholders to attract schools’ attention, depending on their power, legitimacy and urgency vis-à-vis the school. In order to ensure that the identification of stakeholders is not limited to those most salient, schools must make efforts to involve less powerful or inactive stakeholders.
- **Build stakeholder capacity:** This is particularly important while establishing accountability relationships with weaker stakeholders who might not have the requisite knowledge and language to fully engage in the accountability processes.
- **Self-evaluation that provides real insight into schools’ quality and processes:** Proper school self-evaluation requires “assessment literacy” from school leaders as well as from teachers and other professional staff. School leaders should empower staff to be involved, be open to parents and members of the local community, and be held accountable by them. They must also build bridges between teachers and educational staff and external accountability demands.

 “Looking Beyond the Numbers: Stakeholders and Multiple School Accountability”, *OECD Education Working Papers*, No. 85, 2012

Seismic safety in schools should be recognised as an important goal and national programmes should be established on an urgent basis to assure earthquake safety of new and existing schools. The principles guiding such programmes should include:

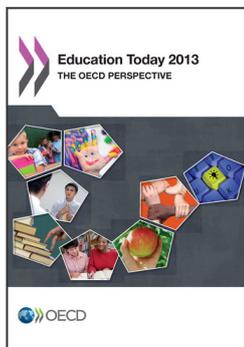
- **Establish clear and measurable objectives for school seismic safety,** based on the level of risk which can be implemented and supported by the affected residents of communities and agencies at the local government level.
- **Define the level of the earthquake hazard** in order to facilitate the development and application of construction codes and standards.
- **Specify the desired ability of school buildings to resist earthquakes.** School buildings should be designed and constructed or retrofitted to prevent collapse, partial collapse or other failure that would endanger human life when subjected to specified levels of ground shaking and/or collateral seismic hazards.
- **Give priority to making new schools safe.** A longer timeframe will likely be needed to correct seismic weaknesses of existing school buildings.

 OECD Recommendations Concerning Guidelines on Earthquake Safety in Schools, 2005; *School Safety and Security: Keeping Schools Safe in Earthquakes*, 2004



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