6

Outcomes, Benefits and Returns

Very rich information on educational outcomes has been generated through OECD work, especially with the triennial Programme for International Student Assessment (PISA), which surveys the achievements of 15-year-olds in reading, mathematics, science and related aspects of competence, together with a range of associated background information. The Strong Performers and Successful Reformers in Education *series has allowed for deeper understanding of the policy trajectories and practices of those education systems that are among the "top" performers on PISA. Education is also closely related to employment outcomes and earnings, with key OECD findings reported in this chapter. Additionally there is an expanding analysis of returns to education within the OECD, with findings confirming the positive returns to higher levels of educational attainment on a variety of measures, certainly for the individual, but also for the economy at large. There are also positive returns to early childhood education and care, and to vocational education. Work on the social outcomes of education examines how education influences health, civic participation and social engagement, as well as the economic outcomes.*

INTRODUCTION

Very rich information on educational outcomes has been generated through OECD work, especially with the triennial Programme for International Student Assessment (PISA) surveys. These survey the achievement of 15-year-olds in different competence areas, together with a growing range of associated background information, and in many non-member countries and economies, as well as those of the OECD. In charting patterns, large numbers do not attain levels that might be regarded as the minimum for 21st century knowledge economies. There is also expanding analysis of returns to education within the OECD. Findings confirm the positive returns to higher levels of educational attainment on a variety of measures, certainly for the individual, but also for the economy at large. Education affects employment and earnings, but it also has an impact on an individual's well-being and contribution to society. Work on the Social Outcomes of Learning examines the evidence on how education influences health, civic participation and social engagement.

In 2010 the OECD embarked on *Strong Performers and Successful Reformers in Education* to gain deeper understanding of the policy trajectories and practices of those education systems that are among the "top" performers on PISA. The analysis has allowed for more country specific, as well as generally applicable, policy lessons.

The strong OECD focus on outcomes is expanding beyond teenage achievements as surveys of adult competences (OECD Survey of Adult Skills [PIAAC], see Chapter 5) and outcomes from higher education (Assessment of Higher Education Learning Outcomes [AHELO], see Chapter 4) are in development.

KEY FINDINGS

Among OECD countries, students in Finland and Korea are the top performers in reading literacy but Shanghai-China heads even these: Korea and Finland are the highest performing OECD countries in reading literacy in PISA 2009, with mean scores of 539 and 536 points respectively compared with the OECD average of 493. However, the partner economy Shanghai-China outperforms both of them with a mean score of 556. Across all OECD countries, 8% attained the top 5 and 6 levels; Shanghai-China had more than double this percentage (19%). Other countries with 12% or more at Level 5 or 6 were Australia, Canada, Finland, Japan, Korea, New Zealand, and the partner economies Singapore and Hong Kong-China. All these cases show significant pools of young people with the high-level literacy skills to advance social development and the knowledge economy.

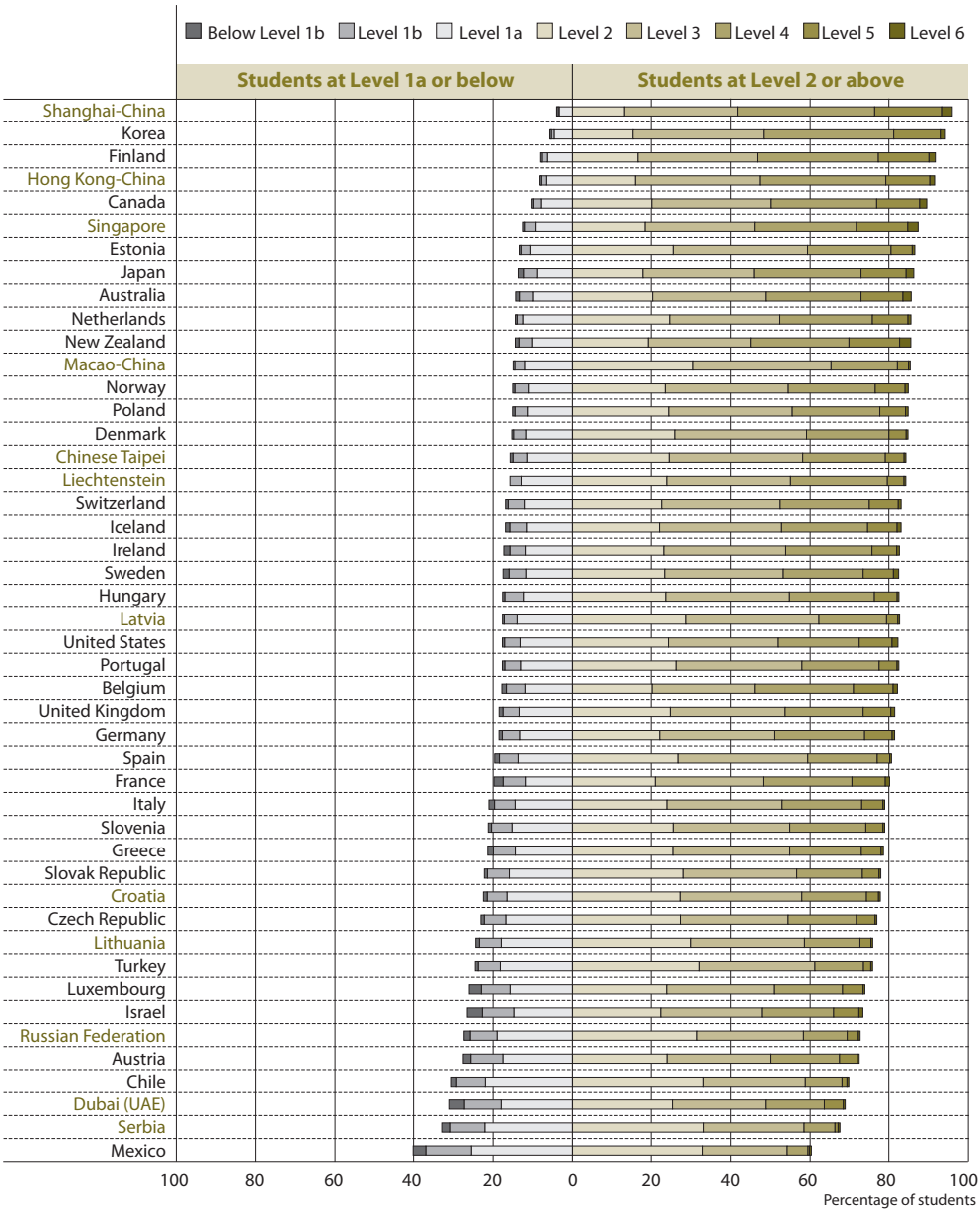
PISA 2009 Result: What Students Know and Can Do: Student Performance in Reading, Mathematics and Science, 2010, Chapter 2

Very few countries do not escape having significant minorities of students with very low performance in reading literacy: With the exception of Finland and Korea, all OECD countries have at least 10% of students who achieve at only PISA level 1 or below in reading literacy.

Figure 6.1.

How proficient are students in reading? (2009)

Percentage of students at the different levels of reading proficiency



Countries are ranked in descending order of the percentage of students at Levels 2, 3, 4, 5 and 6.

Source: OECD, *PISA 2009 Database*, Table I.2.1.

StatLink http://dx.doi.org/10.1787/888932343133

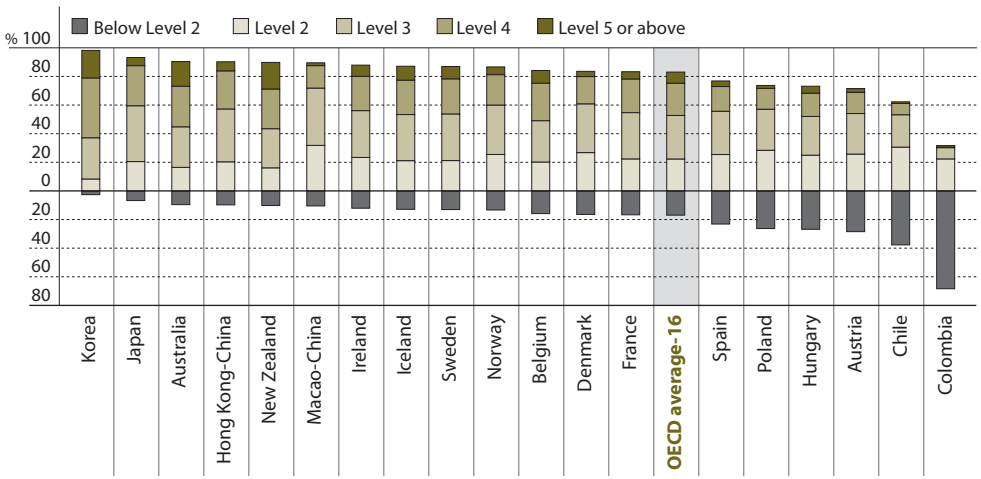
In 11 OECD countries (Austria, Chile, the Czech Republic, Greece, Israel, Italy, Luxembourg, Mexico, the Slovak Republic, Slovenia and Turkey) this accounts for a fifth or more of the students. The lowest-achieving students in reading literacy make up close to third or more of 15-year-olds in Chile (31%) and Mexico (40%). The average for OECD countries is nearly one student in five not reaching Level 2, which is widely recognised as an important minimum threshold of competence for the 21st century.

PISA 2009 Result: What Students Know and Can Do: Student Performance in Reading, Mathematics and Science, 2010, Chapter 2

Fewer than half of young people reach or surpass PISA level 3 in reading literacy – the level which involves comprehension and interpretation of moderately complex text: Across OECD countries, the majority (57%) of 15-year-old students are proficient at Level 3 or higher. For half of this 57% of the total, this is the highest level reached, making Level 3 the most common level of performance for students across OECD countries. In four countries and economies – Finland, Hong Kong-China, Korea and Shanghai-China– over three-quarters of the students are proficient at least to Level 3. On the other hand, this degree of proficiency is demonstrated by fewer than half of the students in the OECD countries Austria, Chile, the Czech Republic, Luxembourg, Mexico and Turkey.

PISA 2009 Result: What Students Know and Can Do: Student Performance in Reading, Mathematics and Science, 2010, Chapter 2

Figure 6.2.
How proficient are students in digital reading? (2009)



Note : "OECD average 16" includes the 16 OECD member countries appearing in this figure.
Countries are ranked in descending order of the percentage of students at Levels 2, 3, 4, 5 or above.
Source: OECD, *PISA 2009 Database*, Table VI.2.1.

StatLink http://dx.doi.org/10.1787/888932435378

All OECD countries, except Korea, have significant numbers of low-performing students in digital reading: In PISA 2009, all participating countries and partner economies have significant numbers of low-performing students in digital reading, with the exception of Korea. In Chile, Austria, Hungary and Poland, more than a quarter of students perform below Level 2 on digital reading, rising to as high as 70% in the partner country Colombia. Many of the students at this proficiency level can scroll and navigate across web pages, as long as explicit directions are provided, and can locate simple pieces of information in a short block of hypertext. But, they are still performing below the levels that allow full access to educational, employment and social opportunities in the 21st century.

PISA 2009 Results: Students On Line: Digital Technologies and Performance, 2011, Chapter 2

Nine out of ten 15-year-olds in OECD countries have access to the Internet at home, but disparities still exist: 89% of 15-year-old students in 2009 reported access to the Internet at home as an OECD average; in Denmark, Finland, Iceland, the Netherlands, Norway, Sweden and Switzerland, and the partner economy Hong Kong-China, home Internet access levels are much nearer to 100%. In Mexico and 11 partner countries, less than 40% of students reported having Internet access at home. Socio-economically advantaged students reported higher levels of Internet access at home than disadvantaged students, with the socio-economic factor more important in countries with lower levels of Internet access overall. The gap between advantaged and disadvantaged students in home Internet access is more than 70 percentage points in Chile and Mexico.

PISA 2009 Results: Students On Line: Digital Technologies and Performance, 2011, Chapter 5

PISA analyses of reading suggest that:

- **Parents should read their children books:** Reading books to children when they are just beginning primary school has a positive impact on children's reading performance. Reading at home benefits children because it shows them that reading is something that their parents value.
- **Parents should talk to their adolescent children about social, political and other issues:** Talking about social and political issues, or about books, films and television programmes with adolescent children is related to better reading performance at school. Children will enjoy reading more when they have parents who want to hear about what they have just read.
- **Parental involvement is associated with greater student engagement in school:** Parental involvement in their child's school is associated with greater student engagement in school, including participating in activities such as meeting with teachers or school principals or volunteer work at school.
- **Children should learn the positive attitude towards reading from their parents:** Children whose parents are more inclined to read and hold positive attitudes towards reading are better at reading than those who do not. Parental habits and attitudes

towards intellectually engaging activities, and towards books and academic achievement, shape their child's attitudes towards reading, school and learning, and ultimately school performance as well.

📖 *Let's Read Them a Story! The Parent Factor in Education,* 2012, Chapters 1 to 5

Across OECD countries, about four in five students are proficient in mathematics at level 2 or higher: On average across OECD countries 78% of students reach or surpass PISA Level 2 – the level at which students begin to demonstrate the kind of skills that enable them to use mathematics in ways considered fundamental for their future development. In Finland and Korea, and in the partner countries and economies Shanghai-China, Hong Kong-China, Liechtenstein and Singapore, more than 90% of students perform at or above this threshold. In every OECD country except Chile, Mexico, Turkey, Israel and Greece, at least three-quarters of students are at Level 2 or above; in Chile and Mexico, more than half of all students are below Level 2.

📖 *PISA 2009 Result: What Students Know and Can Do: Student Performance in Reading, Mathematics and Science,* 2010, Chapter 3

The gender gap in science performance is small: For most OECD countries there are no statistically significant differences between young women and men. The largest gender differences in favour of boys are observed in the United States and Denmark, with 14 and 12 points, respectively, and in the partner countries Colombia and Liechtenstein, with 21 and 16 points respectively (the PISA average score in science is set at 501). In Canada, Chile, Luxembourg, Mexico, Spain, Switzerland and the United Kingdom, boys outperform girls in science with a difference that ranges from 5 to 9 points. On the other hand, girls outperform boys in science in Finland, Greece, Slovenia and Turkey, with a difference of 10 to 15 points, and in Poland with a difference of 6 points.

📖 *PISA 2009 Result: What Students Know and Can Do: Student Performance in Reading, Mathematics and Science,* 2010, Chapter 3

About one in six students are top performers in at least one of the subject areas of science, mathematics or reading: High-level skills are critical for innovation and for economic growth and social development. On average across OECD countries, 16.3% of 15-year-old students are top performers in at least one of the subject areas of science, mathematics or reading. However, only 4.1% are top performers in all three assessment subject areas: excellence is not simply strong performance across the board but can be found among a wide range of students in different subject areas. The percentage of students who are top performers in both mathematics and science (but not reading) is greater than the percentages who are top performers in reading and mathematics only or in reading and science only.

📖 *PISA 2009 Result: What Students Know and Can Do: Student Performance in Reading, Mathematics and Science,* 2010, Chapter 3

Around one in five students is consistently able to identify, explain and apply scientific concepts related to environmental topics: On average across OECD countries, 19% of 15-year-olds perform at the highest level of proficiency in environmental science in which students can consistently identify, explain and apply scientific knowledge related to a variety of environmental topics. They clearly and consistently demonstrate advanced thinking and reasoning in science relevant to the environment and can use this understanding to develop arguments relating to social and global environmental issues. In Canada, Finland and Japan, over a third of 15-year-olds have high levels of environmental literacy.

PISA in Focus No. 15, April 2012

Investment in early childhood education and care brings significant returns to individuals and society: Research from diverse countries suggests a common conclusion that investment in young children brings significant benefits not only for children and families, but also for society at large. High-quality early childhood services lay a strong foundation of learning which is fundamental to the rest of the lives of the individuals involved. Children from disadvantaged backgrounds, in particular, benefit from acquiring such a foundation. Early childhood investments bring: significant educational, social, economic and labour market returns; improved transitions from one educational level to the next; higher achievement; and lower crime rates among teenagers. Lack of investment in children's services can result in child-care shortages and unequal access, even segregation, of children according to income. Unavailability of services raises barriers against women's full-time employment – with the economic and social consequences which flow from that – and tends to channel women towards low-paid, part-time jobs.

Starting Strong II: Early Childhood Education and Care, 2006, Annex D

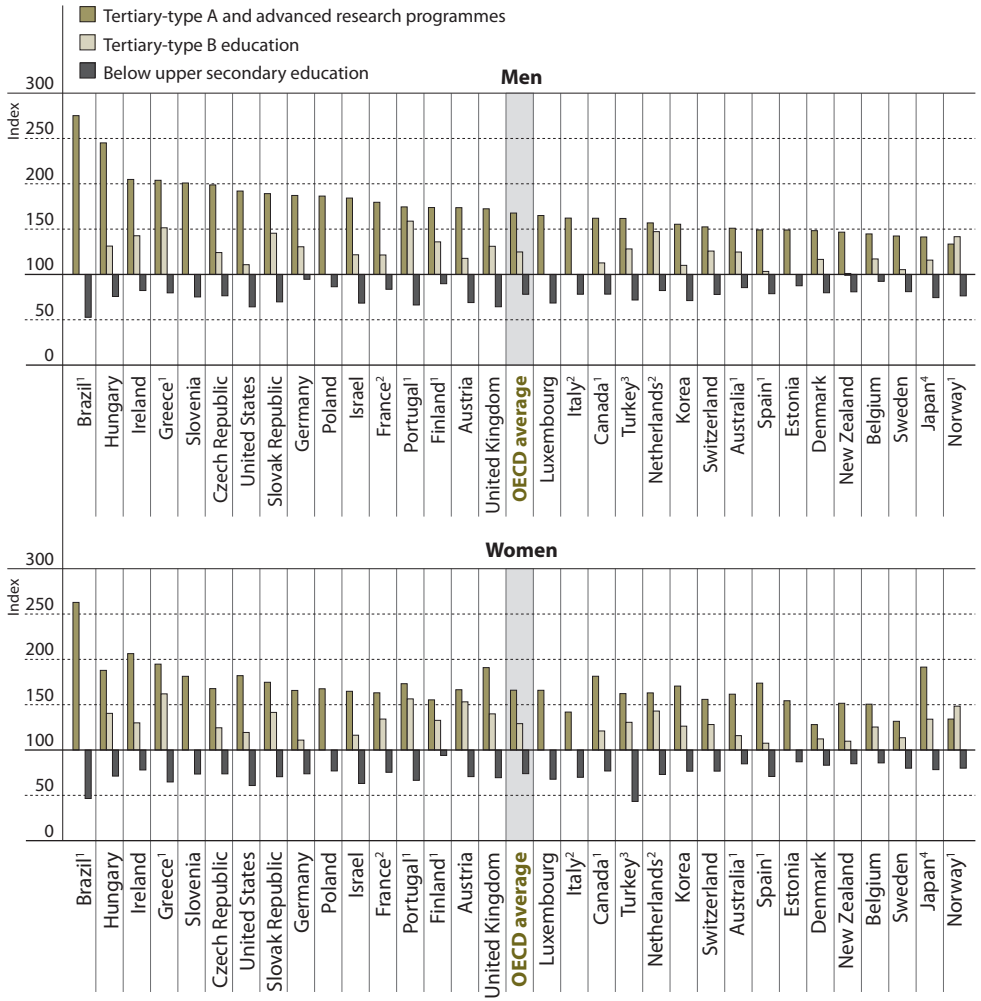
Attaining at least upper secondary education is an important hedge against the risk of unemployment: The unemployment rate among those adults aged 25-64 years with an upper secondary education is clearly lower than among those who have not got further that the lower secondary level – on average nearly 5 percentage points lower in 2010. This gap is particular high in the Czech Republic (16.6 percentage point gap), Hungary (14) and the Slovak Republic (28.6), and is also high in Estonia (9.6) and Germany (9.0), and in these countries the gap has grown over the past decade. Expressing this upper secondary advantage as a ratio of unemployment rates, those with upper secondary education are half or less than half as likely to be unemployed compared with those with lower secondary education in Austria, Belgium, the Czech Republic, Germany, Hungary, Norway and the Slovak Republic. There is a group of countries however – Chile, Greece, Korea, Mexico and Turkey – in which the unemployment risk among those finishing education at the lower level is slightly smaller, compared with the upper secondary level.

Education at a Glance 2012: OECD Indicators, 2012, Indicator A7

Figure 6.3.

Relative earnings from employment among 25-64 year-olds, by level of educational attainment and gender (2010)

Upper secondary and post-secondary non-tertiary education = 100



Note: Belgium, Korea and Turkey report earnings net of income tax.

1. Year of reference 2009.
2. Year of reference 2008.
3. Year of reference 2005.
4. Year of reference 2007.

Countries are ranked in descending order of the relative earnings of 25-64 year-old men with tertiary-type A education (including advanced research programmes).

Source: OECD (2012), *Education at a Glance 2012: OECD Indicators*, OECD Publishing. Table A8.1. See Annex 3 for notes (*www.oecd.org/edu/eag2012*).

StatLink http://dx.doi.org/10.1787/888932662143

In most countries the earnings pay-off for adults having acquired an upper secondary education is clear… but not everywhere: In 2010, the countries with the highest earnings advantage of those with upper secondary compared with lower secondary education for all working-age adults are Austria, Korea, Luxembourg, the Slovak Republic, the United Kingdom and the United States; in these countries, those with the lower attainments earn around only two-thirds to 70% of upper secondary graduates. Women who have not attained an upper secondary education are particularly disadvantaged in Greece, Israel, Italy, Luxembourg, Portugal, Turkey, The United Kingdom, the United States and partner country Brazil, where they earn less than 70% those of women with an upper secondary education. The same situation applies to men in Austria, Israel, Luxembourg, Portugal, the Slovak Republic, the United Kingdom, the United States, and partner country Brazil. There is, however, a small number of countries in which the earnings advantage of upper secondary graduates is not particularly marked – the lower attainers earn 85% or more of those with upper secondary education – as is found in Belgium and Estonia for men and women, Germany and Poland for men, and New Zealand for women.

📖 *Education at a Glance 2012: OECD Indicators,* 2012, Indicator A8

There is a strong positive relationship between education and the average earnings of individuals with tertiary-level attainments: In all countries, graduates of tertiary education earn substantially more than upper secondary graduates who in turn earn more than those whose attainment does not go beyond basic education. Earnings differentials between higher education and upper secondary graduates are generally greater than between upper and lower secondary graduates. The earnings premium for tertiary over upper secondary graduates, all adult ages and men and women combined, ranges from a high of 2.10 times the incomes of the upper secondary group in Hungary to a modest 1.24 higher in New Zealand.

📖 *Education at a Glance 2012: OECD Indicators,* 2012, Indicator A8

Even adding in the costs of acquiring more education, the higher average subsequent earnings mean that it pays to continue to upper over lower secondary education: For men and women, continuing on to upper secondary education after the lower secondary level pays off on average in all countries. For men, this "private" rate of return stands at 13.4% on average across the 25 OECD countries permitting these calculations, and over 15% in 5 of these countries. The range lies between 6.7% in Germany, to 40.8% in the Slovak Republic. The range is greater for women, lying between 4.9% in Finland, up to 42.8% in the Slovak Republic. The average individual rate of return for women for upper secondary education is 13%.

📖 *Education at a Glance 2012: OECD Indicators,* 2012, Indicator A9

Pursuing a tertiary education can entail significant costs, but the long-term economic benefits, for both individuals and countries, are sizable, too: An individual invests on average about USD 55 000 to acquire a tertiary qualification on average across the OECD countries. However, the personal benefits are sizeable, too. The returns are typically higher

for men who can expect an average net gain of USD 162 000, whereas a woman can expect a net gain of USD 110 000. Although public investments in tertiary education are large in many countries so are the net public returns. They average at over USD 100 000 for men, almost three times the public investment involved. For women, the net public return is almost twice the level of public investment. In sum, the long-term economic benefits of investing in tertiary education are good for both individuals and countries, and will probably remain so for the foreseeable future.

📖 *Education at a Glance 2012: OECD Indicators,* 2012, Indicator A9; "What Are the Returns on Higher Education for Individuals and Countries?", *Education Indicators in Focus,* No. 6, 2012

The returns to tertiary compared with upper secondary education are also positive across OECD countries: The relative advantage of continuing on to acquire tertiary over upper secondary education is also positive in all the countries with data. For men, it is 12.4% and for women 11.4% in the 28 countries permitting calculations. The rate of return advantage of continuing to tertiary beyond upper secondary rises to 20% or more for men in Hungary, Poland and the Slovak Republic, and to 19% or more for women in Poland, the Slovak Republic and Turkey. The countries where the rates of return to higher education are lower for men than women are Australia, Belgium, Canada, Denmark, Japan, Korea, Norway and Spain.

📖 *Education at a Glance 2012: OECD Indicators,* 2012, Indicator A9

Projections suggest that there are enormous economic gains to be obtained by OECD countries that can improve the cognitive skills – and not just the educational attainment – of their populations: Projections based on historical relationships (bearing in mind the uncertainties of future projections) suggest that if all OECD countries could boost their average PISA scores by 25 points over the next two decades, the aggregate gain of OECD GDP would be USD 115 trillion over the lifetime of the generation born in 2010. Even more ambitious goals, such as bringing all students to the OECD level of minimal proficiency – a PISA score of 400 – are associated with aggregate GDP increases of nearly USD 200 trillion. Bringing all countries up to the OECD's best performing education system in PISA, Finland, would result in gains in the order of USD 260 trillion. It is the quality of learning outcomes, not the length of schooling, which makes the difference.

📖 *The High Cost of Low Educational Performance: The Long-run Economic Impact of Improving PISA Outcomes,* 2010

Public investment in initial vocational education and training (VET) can make up for insufficient employer provision and delivers good economic returns: Much occupation-specific training is provided by employers but, if left to themselves, they will often not provide their own employees with sufficient training, particularly in transferable skills. Initial VET is designed to fill the gap by providing the needed skills, and research has shown that it can yield good economic returns from the public investment involved. Countries with strong initial VET systems like Germany have been relatively successful in tackling youth unemployment.

📖 *Learning for Jobs,* 2010, Chapter 1

OECD analysis on the social outcomes of learning suggests that education promotes health and civic and social engagement.

- **Education can play a significant role in promoting well-being and social progress and is a cost-effective way to do so:** Education is associated with a variety of social outcomes, such as better health, stronger civic and social engagement, and reduced crime, and is a relatively cost-effective means of improving health, including school-based interventions to tackle obesity, and reducing crime. Hence, education policy has health policy implications.
- **Education empowers individuals by increasing their knowledge and their cognitive, social and emotional skills, as well as improving attitudes towards lifestyles and active citizenship:** Education helps people make competent decisions by providing information, improving cognitive skills, and strengthening socio-emotional capabilities, such as resilience, self-efficacy and social skills.
- **Education's potential cannot be realised in isolation:** Children only spend about half of their non-sleeping hours in schools. Certain home and community environments can undermine, for instance, school-based actions to promote healthy lifestyles and habits when children have easy access to fast-food eating or when they indulge in sedentary activities at home.
- **Education's potential will be limited if children's cognitive, social and emotional skills are not developed early:** Essential competencies are better acquired even before children start compulsory schooling. Basic cognitive skills, positive attitudes, healthy habits and other personality traits such as patience, self-efficacy and self-confidence, need to be nurtured in the family environment early in life.

📖 *Improving Health and Social Cohesion through Education,* 2010, Chapter 4 to 6

Recognition of non-formal and informal learning delivers economic, educational, social and psychological benefits: Recognition of non-formal and informal learning generates economic benefits: it reduces both the costs associated with, and the time required to acquire qualifications in, formal education. It also allows human capital to be deployed more productively by giving people access to jobs that better match their true skills. Recognition provides educational benefits by helping people learn about themselves and develop their career within a lifelong learning framework. It provides social benefits by improving equity through giving access to further education and the labour market to disadvantaged minority groups, disaffected youth, and older workers who missed out on education earlier. Recognition can provide psychological benefits by making people aware of their capabilities and offering external validation of their worth.

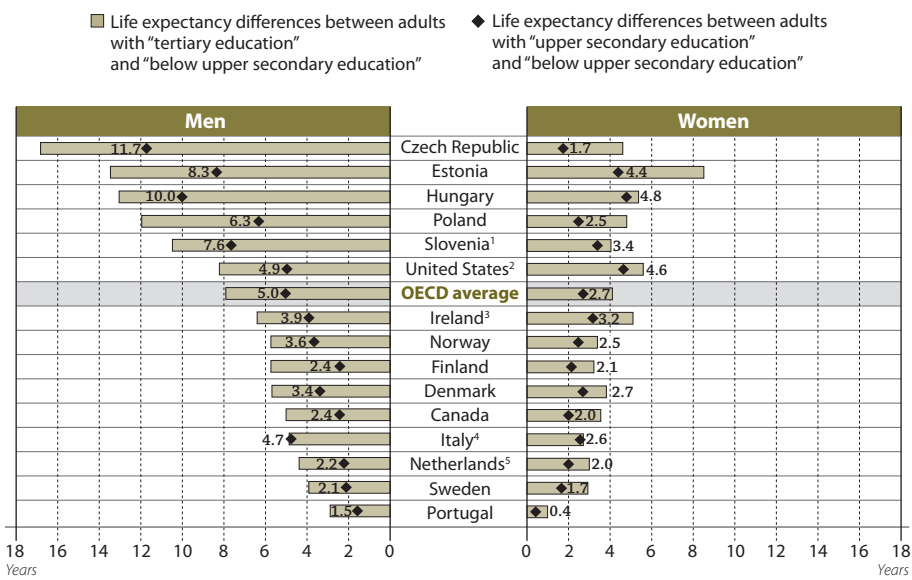
📖 *Recognising Non-formal and Informal Learning: Outcomes, Policies and Practices,* 2010, Executive Summary

Box 6.1. **Education and life expectancy**

Education is an important predictor of life expectancy. On average, among 15 OECD countries, a 30-year-old male tertiary graduate can expect to live another 51 years, while a 30-year-old man who has not completed upper secondary education can expect to live only an additional 43 years. These differences are particularly large among men in Central European countries. On average, a 30-year-old male tertiary graduate in the Czech Republic can expect to live 17 years longer than a 30-year-old man who has not completed upper secondary education.

Difference in life expectancy by educational attainment at age 30 (2010)

Differences between those with "tertiary eduation" and "below upper secondary education" at age 30, by gender



Note: The figures describe the differences in the expected years of life remaining at age 30 across education levels.

1. Year of reference 2009.
2. Year of reference 2005.
3. Year of reference 2006.
4. Year of reference 2008.
5. Year of reference 2007-10.

Countries are ranked in descending order of the difference in life expectancy among men at age 30.

Source: OECD (2012), *Education at a Glance 2012: OECD Indicators*, OECD Publishing. Table A11.1. See Annex 3 for notes (*www.oecd.org/edu/eag2012*).

StatLink http://dx.doi.org/10.1787/888932662390

...

There are substantial gender differences in life expectancy, and in the relationships between education and life expectancy as life expectancy differences by education are generally much smaller among women. On average among 15 OECD countries, male tertiary graduates can expect to live 8 years longer than those who have not attained upper secondary education, while a tertiary-educated woman can expect to live 4 years longer than a woman without an upper secondary education and in Portugal, only for one additional year.

Educational attainment positively enhances health, political interest and trust, with thresholds for the upper secondary level and for political interest at the tertiary level : Adults with higher levels of educational attainment are generally more likely to report that their health is at least good, that they are at least fairly interested in politics, and believe that most people can be trusted. For health, the step in attainment from lower to upper secondary education tends to show up as most influential, while the step up to tertiary is more apparent regarding political interest; no consistent thresholds are apparent regarding trust. The association between education and social outcomes generally remains strong even after adjusting for age, gender and income.

Education at a Glance 2012: OECD Indicators, 2012, Indicator A11; *Improving Health and Social Cohesion through Education,* 2010

POLICY DIRECTIONS

OECD analysis of education systems that are among the "top performers" on PISA has allowed certain policy and governance characteristics of those systems to emerge:

- **Develop a commitment to education:** In the highest performance systems, teachers are typically paid better relative to others, education credentials are valued more, and a higher share of educational spending is devoted to instructional services.
- **Develop a conviction that all students can achieve at high levels:** Evidence shows it takes a concerted, multifaceted programme of policy making, capacity building and the development of proof points to get to the point at which most educators believe that all students can achieve high levels of performance.
- **Establish ambitious, focused and coherent education standards shared across the system and aligned with high-stakes gateways and instructional systems:** The development of world-class academic standards for students tends to be a consistent predictor of the overall performance of education systems. Such standards shape high-performing education systems by establishing rigorous, focused and coherent content at all grade levels; reducing overlap in curricula across grades and variation in implemented curricula across classrooms; facilitating co-ordination of policy drivers, ranging from curricula to teacher training; and reducing inequity in curricula across socio-economic groups.

- **Balance local responsibility with a capable centre with authority and legitimacy to act:** PISA shows the relationship between the relative autonomy of schools and schooling outcomes across systems – when autonomy is coupled with accountability. Once the state has set clear expectations for students, school autonomy in defining the details of the curriculum and assessment relates positively to the system's overall performance.
- **Ensure coherence of policies and practices:** In high performing education systems, policies and practices tend to be aligned across all aspects of the system, coherent over sustained periods of time, and consistently implemented without excessive administrative control.
- **Ensure an outwards orientation of the system to keep it evolving, and to recognise challenges and potential future threats to current success:** Strong and consistent effort to apply disciplined international benchmarking and incorporate the results of that benchmarking into policy and practice is a common characteristic of the highest-performing countries and economies.

📖 *Lessons from PISA for the United States, Strong Performers and Successful Reformers in Education*, 2011, Chapter 11

The quality of an education system depends critically on the quality of its teachers and their capacity to exercise their professional expertise. Therefore, countries should take great care in:

- **Attracting high-quality teachers:** Raising the status of the profession, the bar to enter into the profession and the recruitment of top-performing graduates are some of the policy means that have proven their potential.
- **Investing in the preparation of teachers:** teacher education programmes in the top-performing countries:
  - Are moving their initial teacher-education programmes towards a model based on preparing professionals in clinical settings, in which they get into schools earlier, spend more time there and get more and better support in the process.
  - Put more emphasis on developing the capacity to diagnose student problems swiftly and accurately.
  - Are working to develop the capacity to draw from a wide repertoire of possible solutions those that are particularly appropriate to the diagnosis.
  - Strengthen the specific instructional techniques appropriate for the subjects that the prospective teacher will teach.
  - Some countries develop research skills to enable teachers to improve their practice in a highly disciplined way.
- **Developing teacher quality once they are in the workforce:** Supervision, coaching, induction programmes, reduction of workload in initial years, allocating sufficient hours for personal development and using teacher appraisal systems to steer the personal development of teachers are among the effective policy means to support new teachers.

- **Engaging collaboratively with unions and teacher associations on quality:** There is a relationship between the degree to which teacher work has been professionalised and student performance: the higher a country on the international league tables, the more likely that it is treating its teachers as trusted professional partners and working constructively with its unions.
- **Providing a work organisation in which teachers can use their potential:** The school organisation should allow its staff both the responsibility and the authority to design, manage, budget for and organise the school's programme in its entirety, within the framework provided by the goals, curricula, examinations and qualifications systems put in place by the state.
- **Institutionalising improved practice:** High-performing countries generally consider teaching a profession in which teachers work together to frame what they believe to be good practice, conduct field-based research to confirm or disprove the approaches they develop, and then judge their colleagues by the degree to which they use proven effective practices in their classrooms. The continuous search for more effective teaching practices allows standards of practice to emerge and improvement over time.

📖 *Lessons from PISA for the United States, Strong Performers and Successful Reformers in Education,* 2011, Chapter 11

Education needs to re-invent itself in order to improve the performance of systems and to raise value for money: This will be a tremendous challenge for public policy. It will require often supply-driven education systems to develop effective mechanisms to understand and respond to rapidly-changing economic and social demands for competencies. Effective policies will require understanding not just of the development of competencies, but also of how effectively economies use their talent pool, and of how competencies in turn feed into better jobs, higher productivity, and positive economic and social outcomes. The success of education systems will be measured less by how much countries spend on education or how many complete a degree, and more by the educational outcomes achieved and by their impact on economic and social progress.

📖 *Education at a Glance 2010: OECD Indicators,* 2010, Editorial

Countries should aim to secure similar student performance among schools: Low "between-school variation" means that there is no obvious advantage in terms of performance for a student to attend one school as opposed to another – they all perform to broadly equal levels. In three countries – Norway, Finland and Iceland – less than 10% of variation in mathematics achievement in 2003 was accounted for by such differences – all the rest of the variation is "within-school". The OECD average was much higher than 10% in 2003 and stood at almost exactly a third. Securing similar student performance among schools is both important in itself as a policy goal and is compatible with high overall performance standards.

📖 *Education at a Glance 2006: OECD Indicators,* 2006, Indicator A5

Clarify returns to training by augmenting information and removing structural barriers, and by making the outcomes more transparent to individuals and firms: Effective dissemination of information can help convince individuals and firms of the benefits of training. Cost/benefit analysis provides information that can encourage and motivate adults to learn, as well as clarifying who should cover the financial costs. Efforts to stimulate firms to invest in training would be assisted by promoting the transparency of human capital investments in company accounting. Acting directly on increasing the returns to training through alternative mechanisms, such as embedding skill improvements in the wage determination process, can improve training take-up and firm productivity. National qualifications systems provide greater clarity in this respect and recognition of informal and non-formal learning contributes to reducing the opportunity cost of learning.

Promoting Adult Learning, 2005, Chapter 2

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