



# Trends Shaping Education 2013 Spotlight 1

## Ageing societies

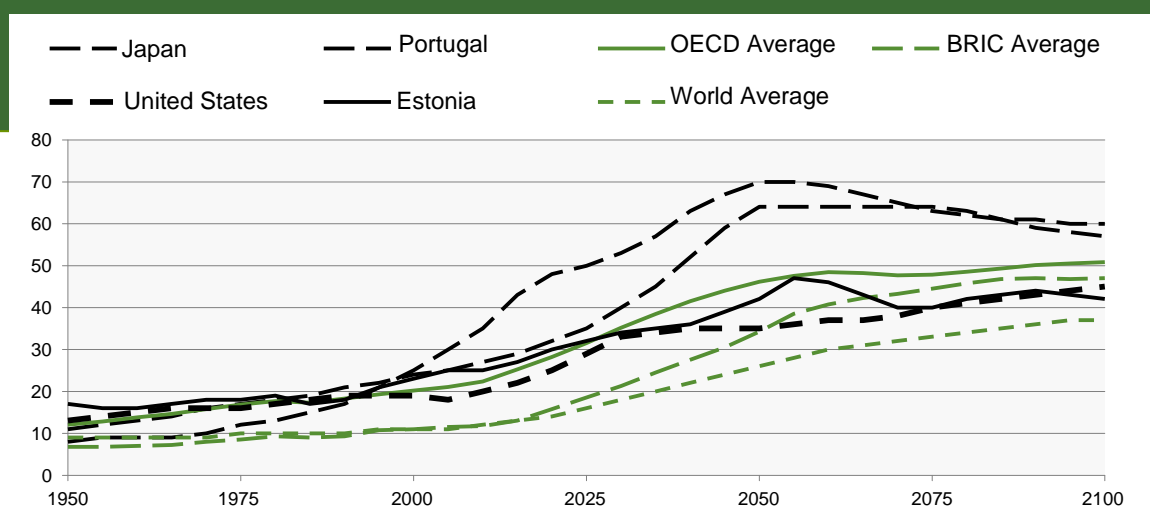
Countries across the OECD are in the midst of a rapid demographic transformation. Average life expectancy across OECD countries has risen from 69 years in 1970 to an average of 79.7 years in 2010. Countries where life expectancy was once low, such as Turkey, are rapidly reaching the OECD average. Indeed, by 2100, the median age across all OECD and BRIC (Brazil, Russian Federation, India and China) countries is forecasted to reach 45 years. As the average age increases, so too does the proportion of the elderly (> 80 years).

In fact, there will be more than twice as many people over the age of 80 in 2050 as there are now.

Rising life expectancy coupled with declining birth rates in most OECD countries has a significant impact on the profile of the population (OECD/ European Union, 2013).

Figure 1. Old age dependency ratio climbing to a plateau

Population aged 65 years and over per 100 persons aged 15-64 years, 1950-2100



StatLink <http://dx.doi.org/10.1787/888932758397>

Note: All values beyond 2010 are medium variant estimates calculated by the United Nations Population Division.

Source: Trends Shaping Education 2013; UNPD data.

As Figure 1 shows, the old-age dependency ratio – which measures the number of financially dependent people over 65 years old as a share of the potential working population, defined as 15-64 years old – has increased throughout OECD countries from 12% in 1950 to 22.3% in 2010.

Trends for countries with currently high old-age dependency ratios, such as Japan and Portugal, will descend to the mean while countries with currently low ratios, such as Estonia and the United States, are expected to see their old-age dependency ratio rise.

This average is expected to double by 2050 and level off at a ratio of 50% or one retiree for every two workers.

This significant proportion of retired people to active workers in society has important economic and social implications. One significant consequence is that the large segment of skilled and experienced workers preparing for retirement will leave a talent void in several sectors of the economy – not least in education.

One of the key challenges, therefore, for education systems in OECD countries will be to attract and retain a steady flow of well-trained educators and administrators in order to ensure quality education for future productivity and economic growth.

## An ageing education workforce

Labour shortages as a result of ageing can be seen across OECD countries in the education sector. In 2011, 40% or more of secondary school teachers were at least 50 years old in Austria, the Czech Republic, Estonia, Germany, Iceland, Italy, the Netherlands, Norway, and Sweden (see Figure 2). Over 60% of all secondary teachers in Italy were over 50 years of age, while in Germany over 50% of all secondary teachers belonged to this age group.

On average, only 15% of teachers were less than 30 years of age across the 31 countries on this graph (OECD, 2013b).

### Attracting and retaining the talent pipeline

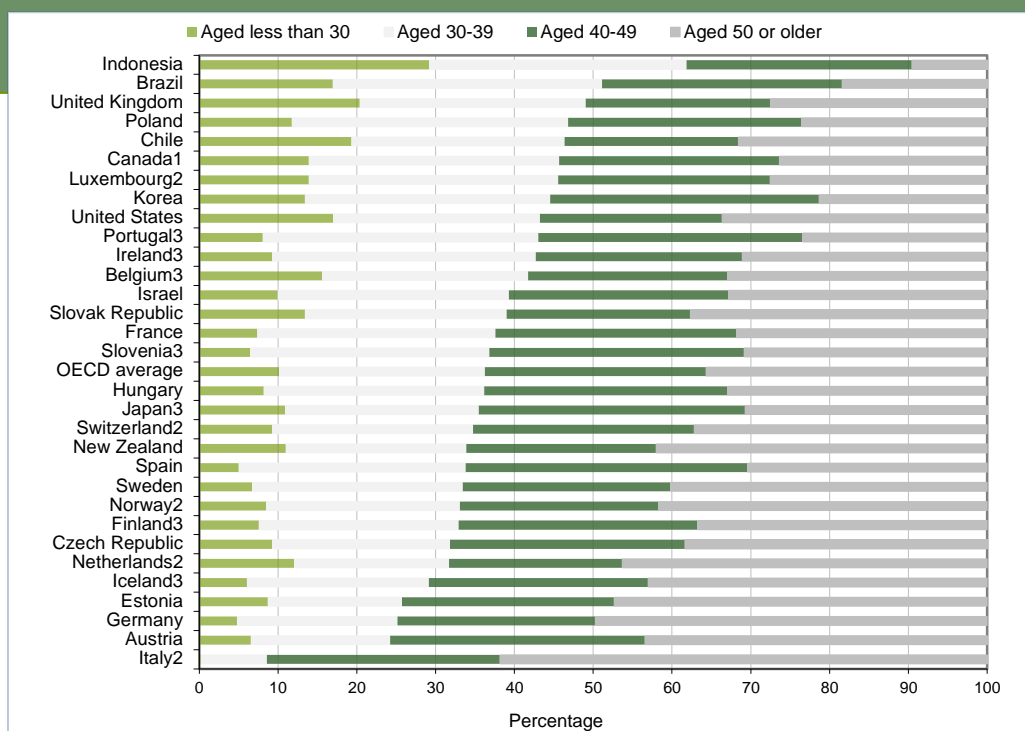
In the face of ageing teacher populations, countries are increasingly focused on recruiting new teachers. Many aim to attract top calibre young teachers to the field. Yet this has budgetary implications: although staff remuneration averaged 78% of the education budget across the OECD in 2010, teacher salaries remain less competitive than those offered in other sectors (OECD, 2013b). On average, teachers earn between 11% and 20% less



than the benchmark salary of a tertiary-educated, 25-64 year-old full-time, full-year worker, depending on the education level they teach (OECD 2013b). Attracting top talent comes at a price, and countries must be realistic about what this policy objective implies in real budgetary terms.

Figure 2. Age distribution of teachers in secondary education (2011)

Distribution of teachers in educational institutions, by age group



Statlink: <http://dx.doi.org/10.1787/888932847925>

Notes: (1). Year of reference 2010. (2). Public institutions only. (3). Secondary education includes post-secondary non-tertiary education. Countries are ranked in ascending order of the percentage of teachers aged 40 years or older at the secondary level.

Source: *OECD Education at a Glance 2013*, Table D5.2 (see Annex 3 for notes), OECD Publishing, [www.oecd.org/edu/eag.htm](http://www.oecd.org/edu/eag.htm). Indonesia: UNESCO Institute for Statistics (World Education Indicators programme).

As policy makers explore solutions to fill the forecasted teacher shortage, governments have been promoting training and career development for those already in the profession to maintain quality talent in the pipeline: thirteen OECD countries require that teachers at some or all levels of education participate in continuing training and education to maintain employment (OECD, 2013b). Other policies to ensure an adequate supply of talent include flexible hours and alternative roles for older teachers.

In addition to recruiting new teaching talent and maintaining the quality of practicing education professionals through career development training, another option is to retain the most effective teachers in the classrooms later in their lifespans. This would not only enrich the pool of talented educators but would also allow more time for mentoring and support of younger colleagues and novice teachers.

## Cultivating a rich reservoir of experienced professionals

An ageing society presents opportunities for today's modern workforce, who – with longer, healthier lives – can contribute more to society than ever before. Postponing the retirement age or adopting flexible work arrangements that allow for a more phased transition into retirement, for example, have become increasingly important options in many OECD countries. Long-established employment protection policies – such as seniority and wage setting – are also being significantly remodeled. The average employment rates for persons aged 55 to 64 – the cohort of the labour force who are approaching retirement – has steadily increased from 47% in 1990 to 54% in 2011 (the leading factor contributing to the rise in employment rates for this segment has been the increase of women in the

### “Young and Old in School” programme teaches valuable work and life skills

In 2007 the August-Claas-School, a secondary school in Germany, launched Young and Old in School (*Jung und Alt im Unterricht*). The programme brought ten retired craftsmen and industrial experts to teach 15-17 year-old pupils skills in engineering and construction. Young, middle and elder generations co-operated to repair bicycles and build furniture, playground equipment, and a cottage.

The project explores intergenerational approaches to helping students transition into working life and improving professional competence. The project workgroups intend to expand their offering to include gardening and landscaping, metal processing, automobile technology, warehouse logistics and agriculture.

#### More information:

[www.emil-network.eu/resources/case-studies](http://www.emil-network.eu/resources/case-studies)

workforce). However, this represents little more than half of what could be a fully active workforce (OECD, 2013b).

As the years in active working life increase, older people will need to continually improve and expand their skill sets. Consequently, education and skills-building to increase employability for older people have become more of a determinant for job security (OECD, 2006).

This demographic transformation may well create new demand for lifelong learning that can address the specific needs of a population looking to improve sustained employability, health and well-being as they plan for longer lives.

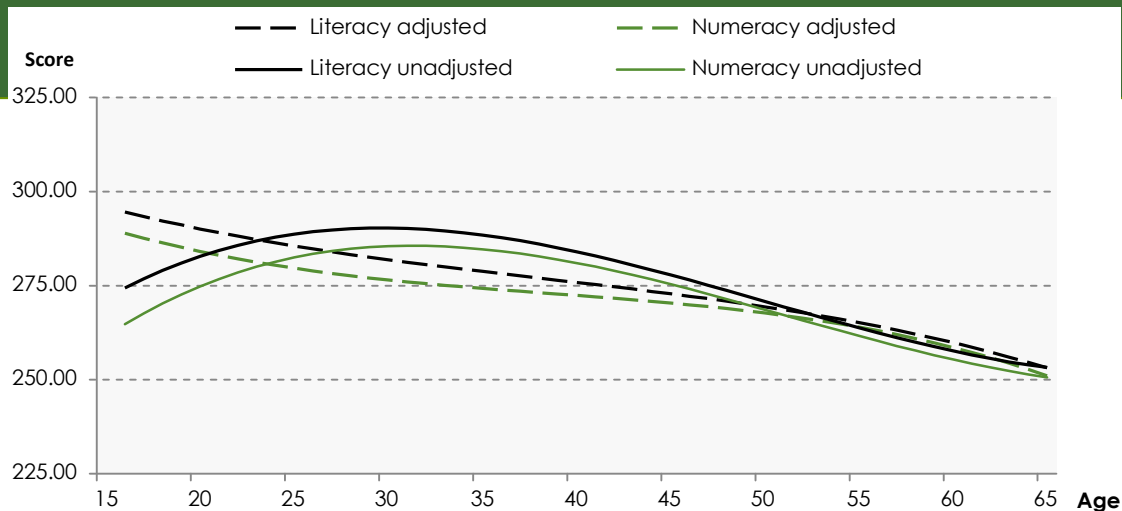
## Learning prepares ageing societies for longer working lives

In an effort to keep productive individuals in the workforce and maintain competitiveness in a global economy, many governments across the OECD have been promoting a lifelong learning culture among the adult population through policies aimed at improving work-based skills development and maintenance, vocational training and apprenticeship, and adult education.

This effort is needed: results from the Survey of Adult Skills (OECD, 2013c)

demonstrate that proficiency reaches a peak at around 30 years of age and then declines steadily, with the oldest age groups displaying lower levels of proficiency than the youngest. Once educational qualifications are taken into account, proficiency declines consistently with age.

Figure 3. Relationship between skills proficiency and age



StatLink: <http://dx.doi.org/10.1787/888932901980>

Note: Average trend scores adjusted for educational attainment and language background, foreign-born adults excluded.

Source: Survey of Adult Skills (PIAAC) (2012).

## Education improves cognitive skills and overall well-being in old age

Education improves social and health outcomes by providing learning that stimulates cognitive abilities and develops social capital. Overall, people with more years in school tend to have better health and well-being. Education has a direct positive impact on healthier behaviours and preferences, as well as indirect effects on income, opportunities and self-confidence (OECD, 2007).

Skills loss can have long-term consequences on future earning opportunities and also on health, quality of life and personal well-being as individuals reach old age. The health benefits and potential savings from education-based policies for adults are significant, especially in light of rising health care costs due in part to ageing populations (OECD, 2007).

Higher levels of education can also impede the onset of **dementia** (Valenzuela and Sachdev, 2005; Paradise et al., 2009). Finding a way to cure dementia is a social and economic imperative: Dementia currently affects 44 million people worldwide, a number forecasted to reach 135 million by 2050 (Prince et al, 2013). In addition to these stark figures, the psychological toll is immense: dementia has replaced cancer as the disease people fear the most.



But the news is not all bad. Although cognitive abilities tend to decline with age, it is possible to slow or even reverse the downtrend. There is also compelling evidence suggesting that individuals' trajectories vary and that people can continue learning into late adulthood (Desjardins and Warnke, 2012).

Education later in life not only stimulates cognitive skills by engaging adults in mental activities, it can also provide for social exchange. As societies continue to transform and adapt to ageing populations, adults may look increasingly to vocational and tertiary education to establish social links that will provide a sense of belonging to their community (OECD, 2010). Indeed, studies have shown that the sense of having something valuable to contribute to society is critical for successful ageing (Desjardins and Warnke, 2012).

Success of education programmes designed for an ageing society will greatly depend on how well the teaching methods and curriculum adapt to the needs of mature workers. This could include, for example, programmes with short, modular courses that build on students' previous learning and experience or online education (OECD, 2006). Another example of this are education programmes that help seasoned professionals at the end of their careers develop new skills as "knowledge brokers" to allow them to transmit their valuable experience and skill sets to younger generations of workers.

One area where education can play a direct role is in increasing **health literacy**. This is the ability of individuals to access and use health information to make appropriate health decisions and to maintain basic health. It also includes possessing the speaking and listening skills required to communicate with health professionals. Research indicates that health literacy falls as age rises, which implies that that such literacy is likely to be weakest among those with the greatest need (Oxley, 2009).

## High returns on the investment in lifelong learning

Promoting the concept of lifelong learning remains a challenge for many OECD countries. Despite the trend toward a longer life expectancy and increasing employment rates for people ages 55 to 64, results from an OECD review of labour policies across 21 member countries indicate that training opportunities and experiences decline with age (OECD, 2006). One of the strongest factors underlying this pattern is the perceived lack of return on investment, from both workers and employers.

Although governments and the private sector have largely identified older employees as a potential source of untapped labour and productivity for sustaining economic growth, resources for education and training still follow a traditional model that focuses on younger age levels (Macarthur Foundation Network, 2012).

In making the case for employers' return on investment in adult training, it can be argued that education resources would be well spent on mature workers, as the potential return on investment for training should rise with longer expected pay-off times as employees expand their work lives and postpone retirement (OECD, 2006).

Another hurdle impeding motivation to improve skills is fewer job opportunities due to ageism. Despite reforms to keep older and experienced people with valuable skill sets in the labour force, older workers are finding it increasingly difficult to keep their jobs. Among workers who exit early from the workforce, whether as a result of unemployment or the choice to retire early, this is likely to be permanent as less than 5% of them on average return to employment within a year. Preparing for better job mobility and financial stability can also yield high benefits for people in mid-career who recognise the increasing importance of having up-to-date skills to carry them through a longer work life (OECD, 2006).

### Japan Promotes Lifelong Learning in its Municipalities

Japan is a rapidly ageing society, with the highest life expectancy at birth among the OECD countries at 83 years and an old age dependency ratio of 35%. In 2006, the government amended its Basic Act on Education to integrate the concept of lifelong learning, ensuring support for its municipalities with funding and guidance. Lifelong learning councils were established at the prefecture level and by 2012, 18 metropolises and 996 municipalities had action plans in place to promote lifelong learning.

Japan's education ministry is maintaining the programme's momentum by providing information on policy developments and good practices, and at the local level, some municipality leaders have formed an alliance for information-exchange and policy research.

#### More information:

<http://pie.pascalobservatory.org/pascalnow>

## Ageing and public spending: A story of shifting priorities?

Across OECD countries, expenditures on social and health programmes are rising faster than GDP growth. In 2010, public spending on education reached an average rate of 6.3% of GDP. Despite the fact that GDP rose (in real terms) for most countries between 2009 and 2010, public expenditure on educational institutions declined in one-third of OECD countries (OECD, 2013b).

Meanwhile, larger proportions of GDP are being spent on health and pension expenditures, with averages of 9.6% and 8.4% respectively (OECD, 2011a and 2011b). Average pension expenditures for the OECD countries are projected to increase to 11.4% of GDP in 2050 (OECD, 2011b). Public and private expenditure on health increased in all OECD countries since

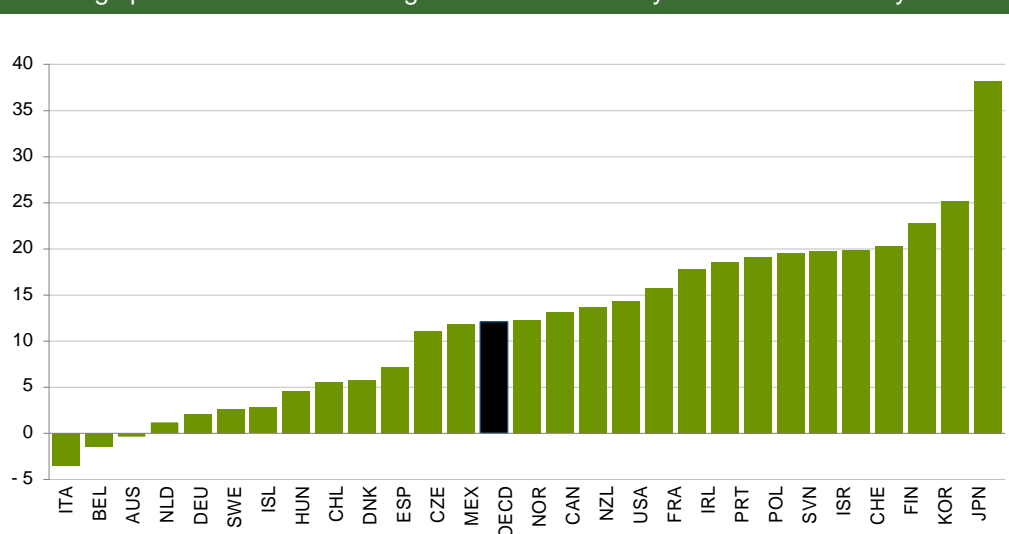
An ageing population may prioritise health care and pensions they currently need over education investments for the future generation and economy.

1960, from 3% of GDP at that time to 6% in 1985 and then again to 10% in 2010. Some argue that this pattern will continue as the transition toward a "greying population" continues. Ageing societies increase demands on health care and social services; with limited public resources, competition for public expenditure may shift the balance towards the elderly.

As Figure 4 shows, older people are more likely to vote than the young, particularly in Korea, Japan and the United Kingdom. Greater civic participation from ageing populations could influence how governments choose to spend their resources (OECD, 2011c).

**Figure 4. Older people are more likely to vote**

Percentage point difference in voting rates between 55+ year olds and 16-35 year olds



StatLink: <http://dx.doi.org/10.1787/888932382121>

Source: International Institute for Democracy and Electoral Assistance (International IDEA) ([www.idea.int](http://www.idea.int)), Module 2 and 3 of the Comparative Study of Electoral Systems (CSES) ([www.cses.org](http://www.cses.org)).



Any substantial reduction of expenditure on education will have immediate consequences as, on average across the OECD, 92% of the funds for primary, secondary and post-secondary non-tertiary educational institutions come from public sources.

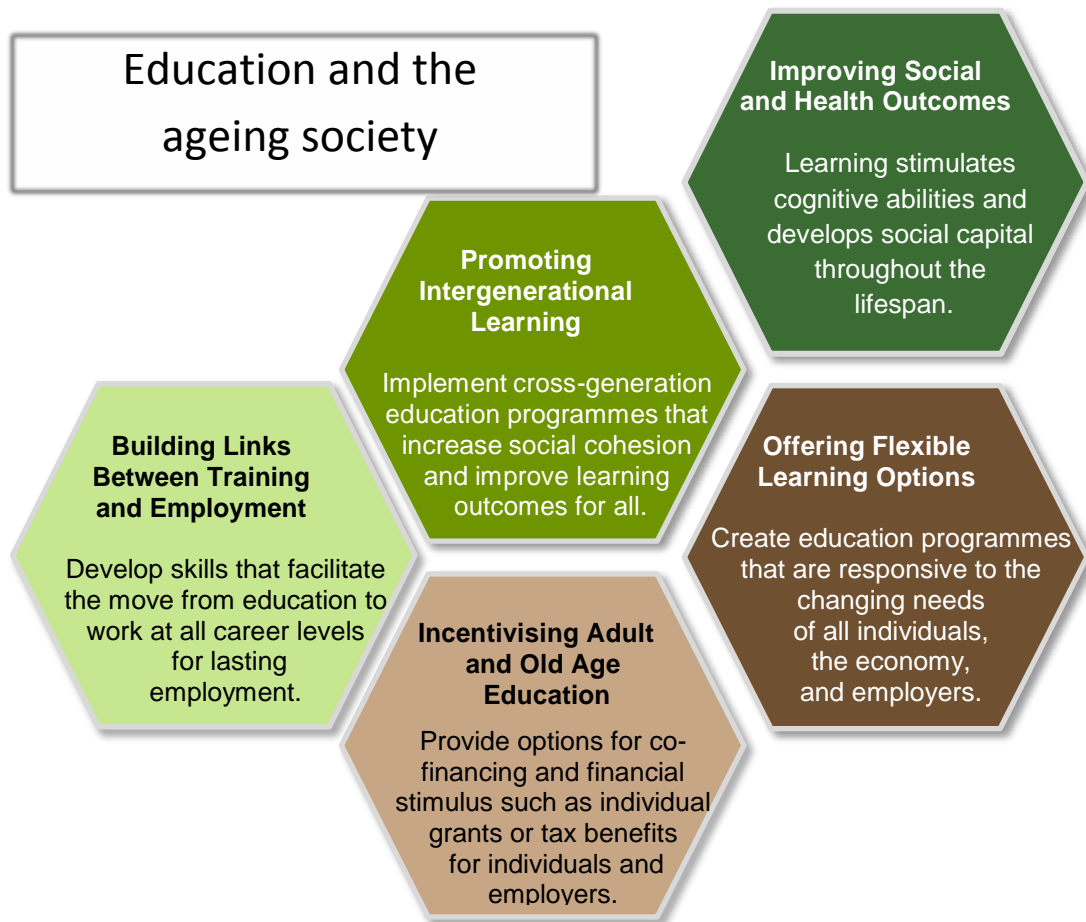
In an era of increasingly tight budgets, solutions are being sought through a number of avenues, from increasing private spending (in education, this is particularly evident for the tertiary and pre-primary sectors) to reducing current expenditures (notably on teaching and the education workforce).

## In sum

The reciprocal impacts of education and an ageing population are many and varied. They range from voting patterns that reflect the new priorities of an ageing population to the need to raise health literacy among the ageing. They range from longer lives to longer working lives – and, thus, to a demand for skills building and education to increase employability and ensure job security.

An ageing population prompts a reconsideration of traditional models of education and encourages approaches to teaching and learning that are more fluid, adaptive and innovative. Lifelong learning will play a stronger, even crucial, role in strengthening the human capital of countries and the skills and abilities of individuals. Access to and participation in formal and informal education throughout the lifespan will keep our populations healthier, more physically and cognitively active, and more connected to society. It will also allow the increasingly large proportion of the elderly to enjoy their later years to the fullest.





## References

- Desjardins, R. and A. Warnke (2012), "Ageing and Skills: A review and analysis of skill gain and skill loss over the lifespan and over time", OECD Working Papers, No. 72, OECD Publishing.
- Macarthur Foundation Network on an Ageing Society, 2012, "Promoting Life-Long Learning in an Aging Society," Policy Brief (November 2012), accessed 12 August 2013: [www.agingsocietynetwork.org/files/lifelong%20learning%20brief%20.pdf](http://www.agingsocietynetwork.org/files/lifelong%20learning%20brief%20.pdf).
- OECD (2005), *Promoting Adult Learning*, Education and Training Policy, OECD Publishing. doi: [10.1787/9789264010932-en](https://doi.org/10.1787/9789264010932-en).
- OECD (2006), *Ageing and Employment Policies: Live Longer, Work Longer*, OECD Publishing.

- OECD (2007), *Understanding the Social Outcomes of Learning*, OECD Publishing, doi: [10.1787/9789264034181-en](https://doi.org/10.1787/9789264034181-en).
- OECD (2011a), "Long-Term Projections of Public Pension Expenditure", in *Pensions at a Glance 2011: Retirement-income Systems in OECD and G20 Countries*, OECD Publishing.
- OECD (2011b), "Health expenditure in relation to GDP", in *Health at a Glance 2011: OECD Indicators*, OECD Publishing.
- OECD (2011c), "Voting", in *Society at a Glance 2011: OECD Social Indicators*, OECD Publishing.
- OECD (2013a), *Education at a Glance 2013*, OECD Publishing, doi: [10.1787/eag-2013-en](https://doi.org/10.1787/eag-2013-en).
- OECD (2013b), *Trends Shaping Education 2013*, OECD Publishing, doi: [10.1787/trends\\_edu-2013-en](https://doi.org/10.1787/trends_edu-2013-en).
- OECD (2013c), *OECD Skills Outlook 2013: First Results from the Survey of Adult Skills*, OECD Publishing, doi: [10.1787/9789264204256-en](https://doi.org/10.1787/9789264204256-en).
- OECD/European Union (2013), *A Good Life in Old Age?: Monitoring and Improving Quality in Long-term Care*, OECD Health Policy Studies, OECD Publishing, doi: [10.1787/9789264194564-en](https://doi.org/10.1787/9789264194564-en).
- Oxley, H. (2009), "Policies for Healthy Ageing: An Overview", OECD Health Working Papers, No. 42, OECD Publishing, doi: [10.1787/226757488706](https://doi.org/10.1787/226757488706).
- Paradise, M., C. Copper and G. Livingston (2009). Systematic review of the effect of education on survival in Alzheimer's disease, *International Psychogeriatrics*, Vol. 21, no. 1, pp. 25-32.
- Prince M., M. Guerchet and M. Prina (2013). *The Global Economic Impact of Dementia. 2013-50*. London, Alzheimer's Disease International
- Valenzuela, M.J. and P. Sachdev (2005). Brain reserve and dementia: A systematic review, *Psychological Medicine*, Vol. 36, No. 4, pp. 441-454.

All photos © Shutterstock/[www.shutterstock.com](http://www.shutterstock.com)

#### For more information



#### Contact

**Tracey Burns** ([tracey.burns@oecd.org](mailto:tracey.burns@oecd.org))

#### See

**OECD (2013), *Trends shaping education 2013*, OECD Publishing**

#### Visit

[www.oecd.org/edu/ceri/trendsshapingeducation2013.htm](http://www.oecd.org/edu/ceri/trendsshapingeducation2013.htm)

[www.oecd-ilibrary.org/education/trends-shaping-education-2013\\_trends\\_edu-2013-en](http://www.oecd-ilibrary.org/education/trends-shaping-education-2013_trends_edu-2013-en)

[www.oecd.org/edu/ceri](http://www.oecd.org/edu/ceri)