## Chapter 1

## Ageing OECD Societies

## - FEWER CHILDREN <br> - LIVING LONGER <br> - CHANGING AGE STRUCTURES

The notion of "ageing societies" covers a major set of trends about populations which include, but go well beyond, the fact that people now live longer. It is equally about numbers of children and babies, and what goes on within families. These big trends have profound and direct impacts on schools, and we focus on three related aspects:

- There are fewer and fewer children being born in OECD societies.
- We are living longer.
- There is a new shape to the population distribution as numbers in the different age groups change.

We can show these trends accurately to the present day but forecasting the future is altogether more difficult. For example, many more people may die young than could have been expected at any given time (through wars or a pandemic like HIV/AIDS). Behaviour can shift unpredictably and with it long-term historical trends, such as the half of child-bearing couples worldwide who now use contraception which would have been difficult to predict as recently as the 1960s, when just 1 in 10 did so.
Nevertheless, we include the most authoritative available population forecasts to gain a picture of the long-term changes taking place.

## FEWER CHILDREN

There have been rapid changes in the number of children being born, with births falling dramatically. Families are smaller, women tend to be older when they have children, and more do not have children at all. Education is part of the story, with higher levels of education tending to be associated with fewer children. The number of children born in OECD countries is now so low that the long-term prospect is of population decline, despite the fact that we are living longer as discussed next. On average 2.1 children per woman should be born in a country for there to be long-term population stability: when it is significantly lower than this the population falls. By the beginning of the 21st century, only two OECD countries - Mexico and Turkey - were still above the 2.1 line. This is in sharp contrast with many developing countries where fertility levels remain high.

Figure 1.1. Birth rates well down on the 1960s
Total fertility rates: children per woman aged 15-49, 1960, 1980 and 2003


Source: OECD (2005), Health at a Glance.

This figure shows two key aspects about birth rates. One is change over the approximately 40 years since 1960 . The other is the relative position of the different OECD countries, ordered left to right from those with highest current birth rates to those with the lowest. We see just how significant has been the drop in birth rates. The OECD average was over 3 births per woman aged 15-49 years in 1960 which has been cut in half in only 45 years. For some countries, the fall in the number of children being born has been truly dramatic - such as Korea, which has gone from one of the highest fertility rates of the 30 countries to one of the lowest.

Another pattern which stands out is how similar the birth rates have now become across most countries, with around two-thirds of them belonging in the narrow range 1.3 to 1.8 births for each woman aged 15-49. Compare this with the differences at the start of the 1960s, when some countries (Japan, Hungary, the Czech Republic) already had low birth rates of around 2 while others (Korea, Mexico, Turkey, Iceland, New Zealand) were more than twice as high. Some might be surprised to see Nordic countries to the left of the figure - higher fertility - and Southern European ones with lower fertility, to the right.

The second figure showing the age of mothers when they have their first child reinforces the picture. It underscores the extent of recent change in social behaviour. In 1970, in only 3 of the 16 countries in the figure was the average age for starting motherhood 25 years or more; by 2004, in none of them was it less than 25 . The mothers' age on having their first child now approaches 28 years for the 16 countries whereas in 1970 it was 24 years.

Figure 1.2. Starting parenthood later
Average age when mothers have their first child in a number of OECD countries


Source: OECD (2006), Society at a Glance.

## And education?

- School rolls fall as numbers of young people fall. For some countries that have been experiencing severe teacher shortages this may be a welcome trend. But some countries or regions face difficult questions: how to deal with emptying and closing schools, and the possible reduction in school choices in some communities?
- Falling enrolments present opportunities, not just problems. Is the opportunity being seized to make resources go further for each student and to engage in innovation that would be impossible if schools were completely full? What about new school designs and buildings?
- What does it mean for young people coming into education to have older parents and fewer, often no, brothers and sisters? How does it change the way in which they experience (school) life and how will schools need to respond to this profound change?


## LIVING LONGER

Never before have people lived longer than today and the gains in the last century have been particularly remarkable. Life expectancy has increased not just in the OECD area but in many other countries, too. The trend to live longer is not without exceptions as life expectancy has gone down in recent years in some central and eastern European countries and parts of sub-Saharan Africa. Women live longer than men in OECD countries and, while life expectancy is steadily going up for both, the gap is not closing. The extent of longevity after the conventional retirement age raises profound questions about the nature of this phase of our lives and the sustainability of pensions practice. It also invites reflection about the role of education which so often is seen as primarily for young people.

Figure 1.3. People live longer


Source: OECD (2003), The World Economy: Historical Statistics.

Life expectancy from 1820 to the end of the 20th century had more than doubled everywhere in the world. The largest increases in life expectancy has been realised in the past 100 years, associated with factors such as improved living conditions, hygiene and preventive health care.

There are still huge differences within the global average - with people in Africa having an average life expectancy that is more than 25 years less than in Western Europe, the United States, and Japan. There have been only very small increases in life expectancy in Russia in the last 50 years, a reflection of the unhealthy lifestyles particularly of men (especially smoking and alcohol consumption). The last 20 years have been even more dramatic for those African countries which have been most severely affected by HIV/AIDS.

Almost everywhere in the world women live longer than men. The next figure shows that in OECD countries, a woman reaching age 65 could expect on average to live to over 80 in 1970 (65+15), while for men in 1970 the OECD average was under 78. Life expectancy after retirement age goes up steadily in the 1980s and 1990s for both men and women and for women is approaching the 85 -year mark ( $65+20$ ). But men, though living longer, are not closing this gap with women.

Living longer has profound consequences. Not only does it affect the population age structure of our societies, with relatively more people over 65 than ever before. It also affects the sustainability of social policies: the retirement age was set at mid-sixties, for example, when on average people expected to live for only a few years afterwards. Now, men can expect to live for another 16 years on average and women nearly 20. Longer life also affects the meaning of old age: it means enjoying potentially many more healthy years, but also more of us becoming very elderly with possible losses in the quality of life.

Figure 1.4. Longer lives after retirement age
Average additional life expectancy of 65 -year-old men and women in OECD countries


Note: The average excludes: Iceland, Korea, Spain and Switzerland.
Source: OECD (2005), OECD Health Data.

## And education?

- When we expect schooling to prepare young people "for life", that means something very different if average life expectancy is 80 to 90 years than when it is only to 50 to 60 years. Do our "long-life" societies call for re-thinking what education should equip young people with?
- What role should the school system be playing in meeting the learning and cultural needs of the many older members of the population? Is it doing enough?
- A lot of older people will be active, mentally and physically, much longer. But such a growth in numbers of elderly people also means many more of us are frail and in need of care, all of which has to be paid for. How will this affect the school sector? What new pressures will there be on resources?


## CHANGING AGE STRUCTURES

The combined effect of living longer and fewer children is transforming population structures. Such structures that even 50 years ago were like pyramids, with a broad base of young age groups and a small top of older people, are being transformed into a "top heavy" shape with a narrower base, a bulging middle moving steadily up, and a long, tapering top. "Dependency ratios" compare the size of the age groups often characterised by financial independence with those who may well be dependent, such as children or the elderly. Very significant increases in the ratios of the 65+ age group can be expected, compared with the middle 15-64 year-olds, with potentially far-reaching consequences on resources available for education.

Figure 1.5. From "bottom-heavy" to "top-heavy" age structures
Age structure in more developed regions with millions of people per age bracket (i.e. Europe, plus Northern America, Australia, New Zealand and Japan) in 1950 and 2050


Source: United Nations (2006), World Population Prospects: The 2006 Revision, online version, http://esa.un.org/unpp/index.asp?panel=2, accessed June 2007.

In Europe and other developed regions, both the actual numbers of children and their share in the total population are decreasing while conversely the older age groups are increasing across the board. In the more developed countries, it is expected that in 2050 there will be more people aged 70 to 74 than in any of the 5 -year age bands up to the age of 29 . There will even be around as many 75-79 year-olds as 0 to 5 -year-olds.

The next figure looks at "dependency ratios". These compare the proportions in age groups often characterised by financial independence with those in age groups who may well be dependent, such as children or the elderly. The "old-age dependency ratio" compares the share of the 65+ age group with the population broadly of "working age" (15 to 64). (It should be stressed that these indicators recognise that many in the 65+ age
group are not "dependent" just as many aged 15-64 are not in paid employment, either.) When the age structure is "bottom-heavy", the key dependency ratios concern children and young people, whereas with the move to the "top-heavy" pattern the focus is shifting increasingly to the older population.

Looking out from 2000 to 2050 across the OECD, numbers of people aged 65+ compared with the 15-64 year-olds are foreseen to more than double. Instead of there being only one $65+$ year-old to five $15-64$ year-olds in 2000 it is expected that this ratio will fall to nearly one to two (47\%) by 2050. The share of older to younger adults is expected to be especially high in the Mediterranean countries of Greece, Italy and Spain, and in Japan at around two in the 65+ bracket for every three 15-64 year-olds. Some of the highest rates of change in this regard will be in countries like Mexico and Turkey with the lowest shares of older people at present.

Figure 1.6. The "old age dependency ratio" set to double by 2050
Population aged 65 and over relative to the population of 15-64 in 2000 and 2050


Source: OECD (2006), Society at a Glance.

## And education?

- The smaller age groups coming to leave education and enter the labour market will not replace the retiring baby-boom generation. Will our current understanding of terms like "school-leaving age", "working age" and "retirement age" come under pressure to change and towards what?
- A common question to ask about rising older "dependency" ratios is whether public expenditure will rocket for healthcare and pensions, leaving less for education for the young. Another is: "who will pay taxes when numbers fall in the working age groups?"
- Can we continue with ever-lengthening periods of time spent by young people in initial education? Do we need more flexible, less linear models which get young people sooner out of education, and, if so, what guarantees to return to education later in life are needed?


## FIND OUT MORE

## OECD publications used

- OECD (2003), The World Economy: Historical Statistics, OECD Publishing, Paris.
- OECD (2005), Health at a Glance, 2005 Edition, OECD Publishing, Paris.
- OECD (2006), Society at a Glance, 2006 Edition, OECD Publishing, Paris.
- OECD (2006), Live Longer, Work Longer, OECD Publishing, Paris.


## Relevant websites

- United Nations, World Population Prospects: The 2006 Revision, online version, http://esa.un.org/unpp/index.asp?panel=2, accessed June 2007.


## Further literature

- OECD (2005), Babies and Bosses, OECD Publishing, Paris.


## Definitions and measurement

- Total fertility rates: The total fertility rate is not something that is actually counted. It is not based on the fertility of any real group of women, since this would involve waiting until they had completed childbearing. Instead it is calculated by imagining that a woman would go through her entire fertile life (15 to 49), where her fertility for each age is based on the current fertility for that specific age group.
- Life expectancy: Life expectancy is the average number of years a human has before death, conventionally calculated from the time of birth (but also can be calculated from any specified age). Calculating this starts with taking the current death rate for people of each age, which also gives one the probability to survive at each age (e.g. if $20 \%$ of the 90 -year-olds die before they turn 91 , probability to survive at that age is $80 \%$ ). The life expectancy is then calculated by adding up these probabilities to survive. This is the expected number of complete years lived.

