

PART II

What is shaping the future of schooling?

Trends and their implication in education

Most people in 1975 would never have believed that by the year 2000, millions of people would simultaneously search key documents from millions of computers in less than one second.

The *Schooling for Tomorrow* Project is compiling a resource on the major trends and driving forces that are most likely to shape schooling in the future. A more complete selection of trends can be found in the Trends Tool which is:

- A stimulus for thinking about trends influencing education, with *suggested* questions they give rise to for education.
- An invitation for users to look further for their own trends to complement the OECD set.
- Accessible to all in education, especially practitioners and decision-makers.

The Trends Tool relies mainly on OECD sources to give, as far as is possible, robust international evidence. In education, decision-makers and practitioners often have only anecdotal information on the ageing society or technological advance or some other major set of changes without solid facts in front of them. Therefore, this resource is intended to fill an important gap.

Sound international evidence as the basis for the Tool inevitably biases its coverage towards the economic, social, environmental and demographic fields where measurements have been in place long enough to give a picture of developments over time. Some of the main factors shaping education are highly subjective and cultural in content, making them difficult to pin down at any one time, let alone over time, and these are not covered. We therefore stress that the Trends Tool is a stimulus to further thinking, not a compendium of all the major trends relevant to the future of schooling.

This Starter Pack section provides a flavour of what is in the Trends Tool resource. It gives a taster, to be used directly along with the other sections of this Pack or else to stimulate users to look further afield at these and other trends. We leave the questions about what they might mean for education for users to address, rather than provide our own ready-made answers.

This Part presents first how to use trends (Sheet II.2), followed by an overview of six important trends in the context of education (Sheet II.37 to II.8.)



Part II: What is shaping the future of schooling?

II.2. How to use trends?

Some examples of trends:

II.3. Fewer Children

II.4. Inequality: international and national

II.5. The Global Economy

II.6. Working Less

II.7. The Expanding World Wide Web

II.8. Less Social Interaction?

How to use trends

The future is inherently unpredictable. Yet, everyone - including policy makers and managers in education - need to make plans and take the future into account. Looking at trends informs our ideas about what might happen through better understanding what is changing in education's environment.

Using trends is not straightforward. Opinions differ on historical developments and which ones are most important. Even when there is agreement on the past, the future will often not turn out to be a smooth continuation of past patterns. Moreover, emerging trends barely visible or noticed at the present time may become critically important in the future.

➔ Look for local trends and local impacts

- **Is this trend relevant in my context?**

Trends may differ both in size and direction in different countries, regions, districts or even schools. Ageing populations, for example, may be a bigger problem in rural than in urban areas or concentrated in certain parts of the county or districts in a city. International trends may have different impacts in different places: rising sea levels are potentially disastrous for Bangladesh but not for Nepal.

- **Are there other important trends?**

The trends in this Starter Pack are highly selective and far from the only relevant ones. They will not be equally relevant in each location or context. Other, sometimes distinctly local, trends may also be important to consider. Different places face different challenges: some, for instance, are declining and de-populating while other areas even in the same country are booming and attracting new people. Each user will need to think of what are the important trends for their purpose.

Judgements about the future which illustrate the hazards of prediction:

“Stocks have reached what looks like a permanently high plateau.”

*Irving Fisher
Yale University, just before the Wall St. Crash*

“Airplanes are interesting toys but of no military value.”

*WW1 leader
Maréchal
Ferdinand Foch*

→ How important are these trends?

■ **How predictable is this trend?**

Trends differ as to how far their continuation is predictable. The more predictable trends – for instance, to do with population growth or environment – lend themselves more easily to long-term planning. Other trends are less predictable: for example, those to do with youth culture or international conflict. For these, making scenarios of what would happen if a particular trend would develop in a certain way will tend to be more appropriate than extrapolation.

■ **How dynamic is this trend?**

Some trends develop slowly (global temperatures went up around 0.74°C in the last 100 years) while other trends may be more dynamic (international trade in services quadrupled in less than twenty years). Stable trends are easier in the sense that their slow pace of change allows for more time to think about what they mean and how to respond.

■ **What is the impact of the trend?**

Climate change may be slow but its potential impact is enormous, possibly threatening life on our planet. Other trends like changing fashion may be more rapid, but have less impact on education. Generally, the more the impact of the trend, the more important it is to anticipate it.

→ How can we deal with these trends?

■ **Can we predict?**

When trends are predictable, long-term planning becomes an option. With demographic change fairly predictable and all children going to primary education, the capacity needed in primary education in, say, 10 years time is open to calculation.

■ **Can we influence?**

If trends are not predictable it may still be possible to influence the trends. Universities have great difficulty in predicting the number of the students who will choose a certain study programme. However, they can attempt to influence the numbers of students applying through advertising campaigns.

■ **Can we react?**

If both predicting and influencing are impossible, creating the flexibility to be able to react after events occur may be the best option. For example, someone starting a business who does not know how it will take off is better advised to lease offices than buy them.

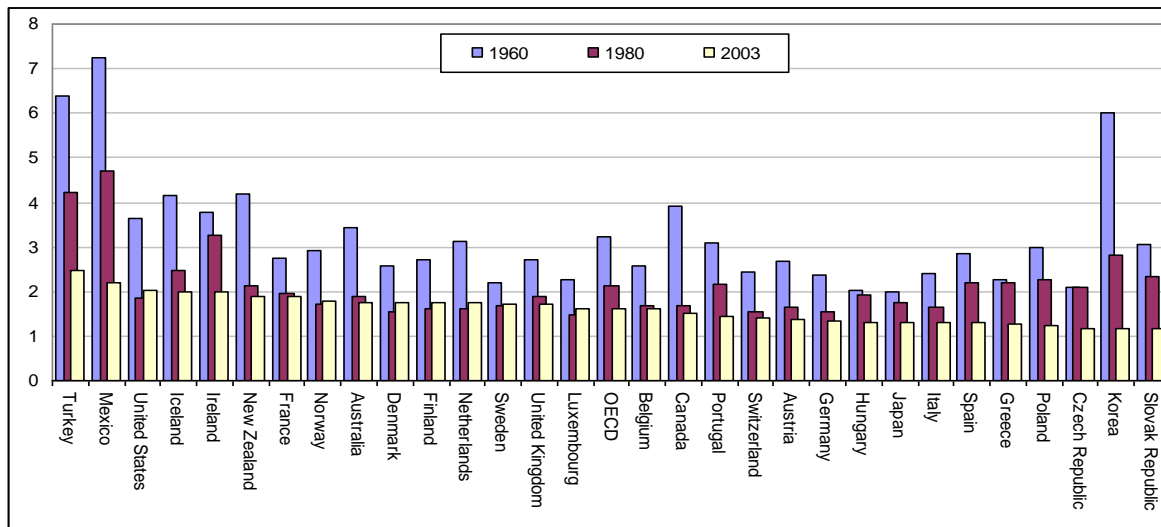
Fewer Children

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 go with lower birth rates. Despite the fact that we are living longer as well, the number of children born in OECD countries is now so low that, if we continue to have fewer children and unless compensated for by immigration, the long-term prospect is of population decline. This is in sharp contrast with developing countries where populations continue to grow.

This trend has important implications for education. For example, falling school rolls bring emptying and closing schools in some communities and possibly reduced choices. More positively, fewer children creates opportunities to make resources go further and to engage in innovations that are considered luxuries when schools are full to bursting point. The trend invites consideration of how education systems might need to shift their centres of gravity towards adult learners.

➔ Birth rates well down on the 1960s

Average number of children born for each woman (aged 15-49) since 1960 in OECD countries



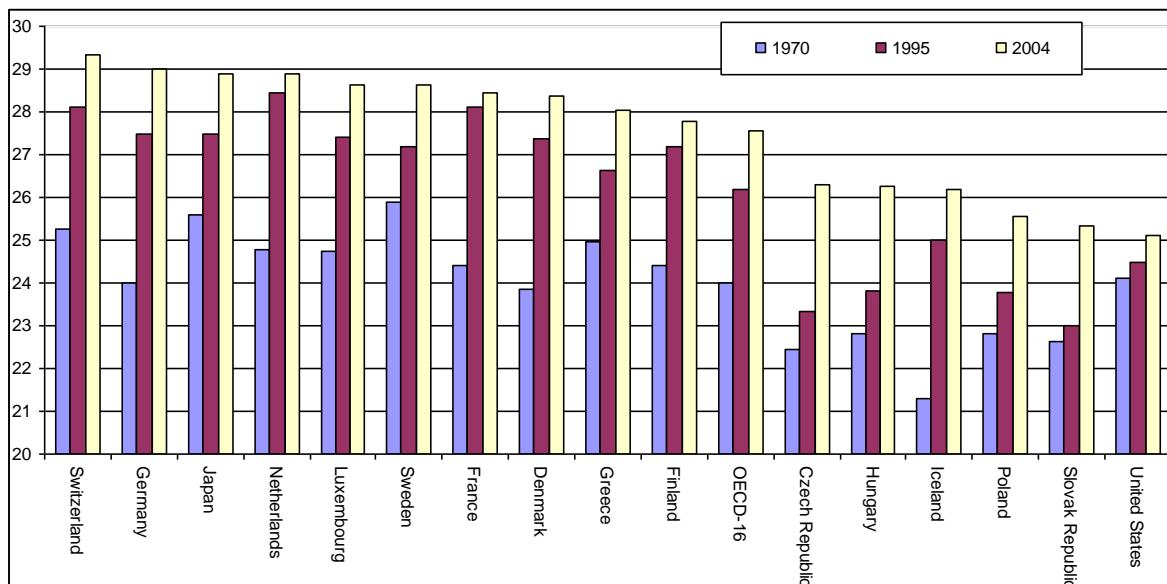
Source: Health at a Glance, OECD 2005

We can 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 up to age 50. 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.

➔ Starting Parenthood Later

Average age when mothers have their first child in a number of OECD countries



Source: Society at a Glance, OECD 2006

This graph shows, for a number of countries, the age of mothers when they have their first child. It underscores the extent of recent change in social behaviour with women getting their first child increasingly later in life. In 1970, in only 3 of the 16 countries in the graph was the average age for starting motherhood 25 years or more; by 2004, in none of them was it less than 25.

Inequality: international and national

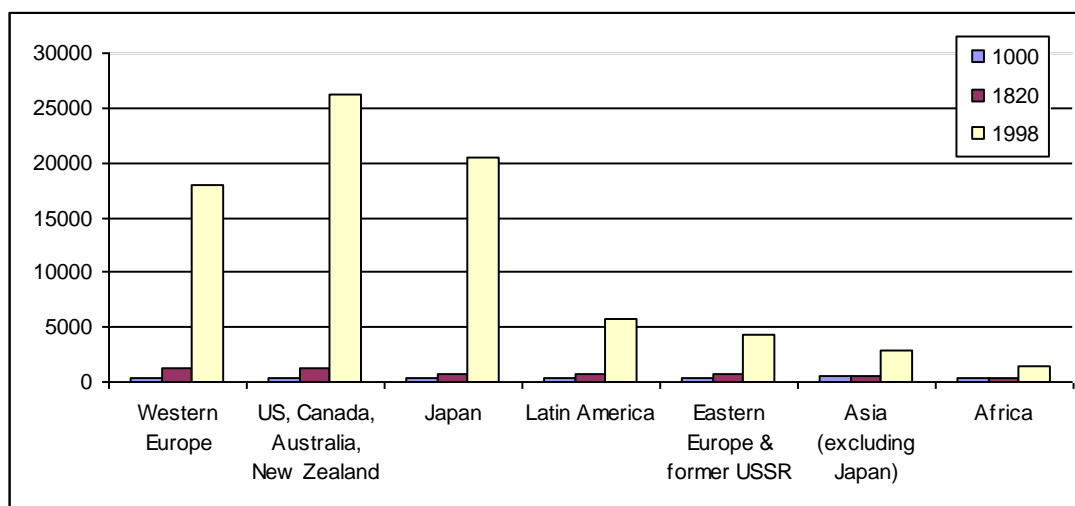
Global inequality has increased over the last two hundred years far more than anything experienced in earlier times. There has been spectacular economic growth in Western countries in the past two centuries, much of it in the past 100 years.

Although some countries in poorer parts of the world, particularly in Asia, have experienced very rapid recent economic growth, the dominant overall trend is that the gap between the average citizen in the affluent and in the poorest parts of the world is now very wide and getting wider. Meanwhile, the recent trends in OECD countries are also towards greater income inequality.

For the less developed regions, education plays a key role in their economic and social development but in many of the poorest countries, especially those in sub-Saharan Africa, the UN Millennium Goal of primary education for all is still a long way off. The OECD countries, meanwhile, strive to maintain their comparative advantage in knowledge and expertise. Within countries, education can stimulate social mobility but it also reproduces inequalities by reinforcing the advantages of the already-advantaged. Can education serve to smooth out rather than reinforce differences between the rich and poor?

➔ The widening wealth gap between regions

A thousand years of comparative regional affluence (GDP per capita in countries in 7 regions measured in international dollars)

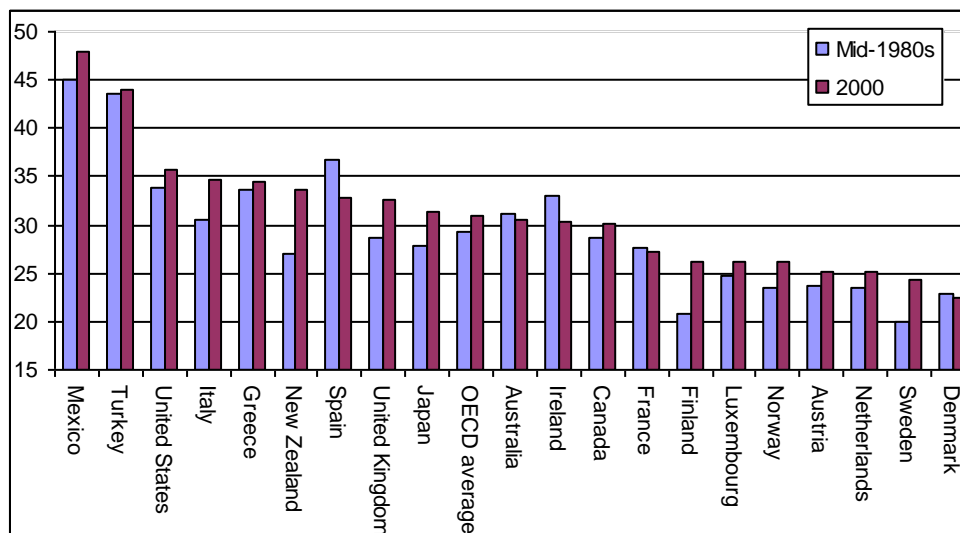


Source: The World Economy, OECD 2003

The wealth of nations has gone up in every one of the seven regional groupings of the above graph (as measured in GDP per capita) but at very different rates in different parts of the world especially in the past two centuries. Global inequality is a key factor running through such international problems as environmental degradation, disease transmission, and political instability. In a global world, the boundaries around the rich and poor, stable and unstable, are not hermetically sealed. What takes place in one part of the world increasingly has consequences for life in another: for example, more and more people see migration to the richer countries as the most attractive – or indeed their only – option.

➔ Income inequality rising in most countries

Income inequality in OECD countries in the mid-1980s and 2000 (Gini coefficients)



Source: Health at a Glance, OECD 2005

Increasing inequality is also found *inside* most OECD countries over the 15 years to 2000. Gini coefficients offer a summary measure of inequality, which are set at zero in cases of absolute equality rising with greater inequality towards 1 (or, as in the above figure, 100). In the 20 countries permitting comparisons, inequality increased in 16 of them. Northern European countries feature strongly among the most equal, with Greece, Italy, the United States, Turkey and Mexico the least.

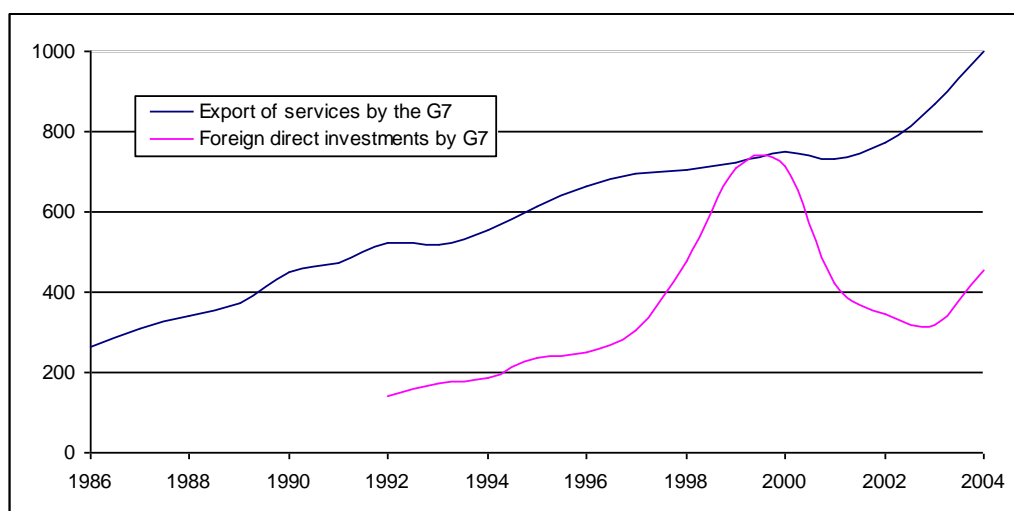
The Global Economy

Economic globalisation means that national economies and enterprises are increasingly subject to international forces. Technological advance, cheaper transport, and the reduction of trade restrictions have all contributed to the process. Multinational firms by definition operate across countries and more firms are becoming global; those operating in the international arena are more diverse, both in size and origin. Some commentators underline the benefits of globalisation, while others are very aware of the costs. Economies are also globalising in the sense that more of them are influential on the world stage: where recently economic activity and power were so concentrated in the Western world and Japan, new economic powers like China and India are now rising.

Economic globalisation affects education in different ways. It raises questions about the meaning of conventional national boundaries, which have been so important in education. The geographical mobility of students and workers inevitably has far-reaching consequences for education it raises questions about the competences that students need to acquire and the international comparability of their educational attainment. In a more global world, should curricula change, with for example more stress on languages and a more global perspective on history and geography?

➔ Increasing economic globalisation

The growing scale of economic activities beyond their borders by the leading (G7) economies: exports of services and outward Foreign Direct Investment (billions of USD current prices)



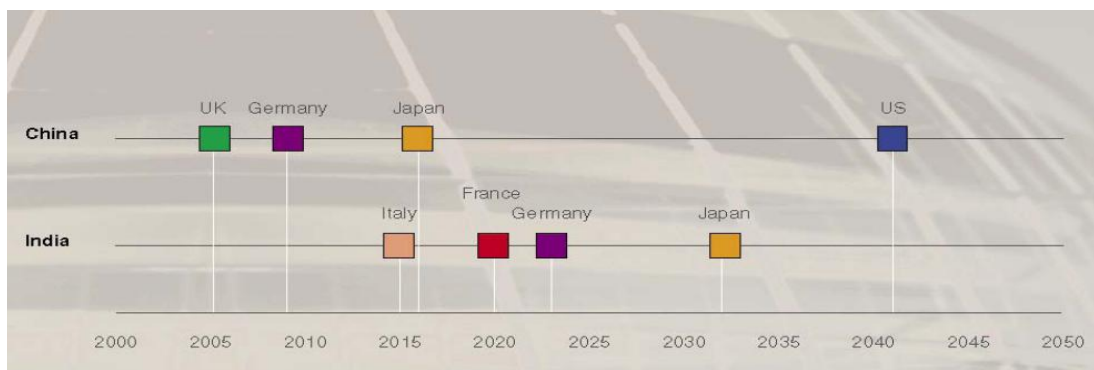
Source: Globalisation Indicators, OECD 2007

PART II: WHAT IS SHAPING THE FUTURE OF SCHOOLING? – AN INTRODUCTION TO TRENDS

Foreign direct investment – which is long term investments by countries outside their own borders – went up spectacularly throughout the 1990s, dipped dramatically during the Internet bubble burst, but has since increased again to be *three times higher* in 2004 than in 1992. Trade in services – such as financial and technical services, but also entertainment and transport - has been increasing throughout the 1990s and the early years of the 21st century. The seven major economies now export around a massive 1000 billion dollars worth of services, an almost fourfold increase since the mid-1980s. The figure illustrates the rise of a global market in which very large sums of capital are transferred in real time across national borders. There are increasing links between economies which lead to the transfer of technology and know-how, with important long-term consequences.

→ China and India catching up

When the Chinese and Indian economies (GDP in purchasing power parities) might overtake in size the current largest economies



Source : National Intelligence Council (2004) Mapping the Global Future, Report of the National Intelligence Council's 2020 Project, 2004

China and India are quickly catching up with most western countries in terms of the size of their economies. China's economy (Gross Domestic Product in Purchasing Power Parities) is forecasted by the US National Intelligence Council (NIC) to exceed that of all individual Western economic powers except for the United States by 2020. By 2020 India's GDP is expected to have overtaken or be on the threshold of overtaking the big European economies. With the integration of China, India, and other emerging countries into the global economy, hundreds of millions of working-age adults will become available for employment on the world labour market. This enormous work force - a growing portion of which will be well educated - will be a source of competition for workers in many Western countries.

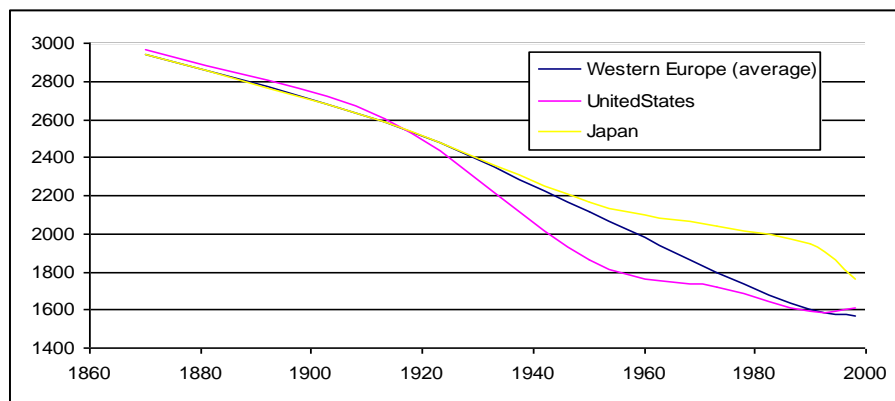
Shorter working hours

The long-term trend is for people to work fewer hours and, over recent years at least, for more to be employed part-time as well. Shorter working hours reflects the changing nature of jobs and production as well as growing affluence, as people do not need to work as long to acquire a given level of welfare. A consequence of the decreasing number of hours worked is an increasing amount of leisure time but also of time for commitments such as family life. Longer, healthier retirements – a feature of shorter working relative to lifetimes – also present significant free-time opportunities. On the other hand, some of the apparent gains are eaten up with longer journey times to work or blurring boundaries between office and home life.

For education, time saved in the working week or year may well mean more for learning, which may anyway be needed as individuals seek to “re-skill” themselves in changing job markets. Increasing leisure time may also allow education to respond to a thirst for “infotainment” (study trips etc.), as well as for more conventional programmes. What should schools do - to what extent do they and should they help prepare people to use free time in meaningful ways?

→ People work less

Numbers of hours worked per year, in Japan, USA and Europe



Source: The World Economy, OECD 2003

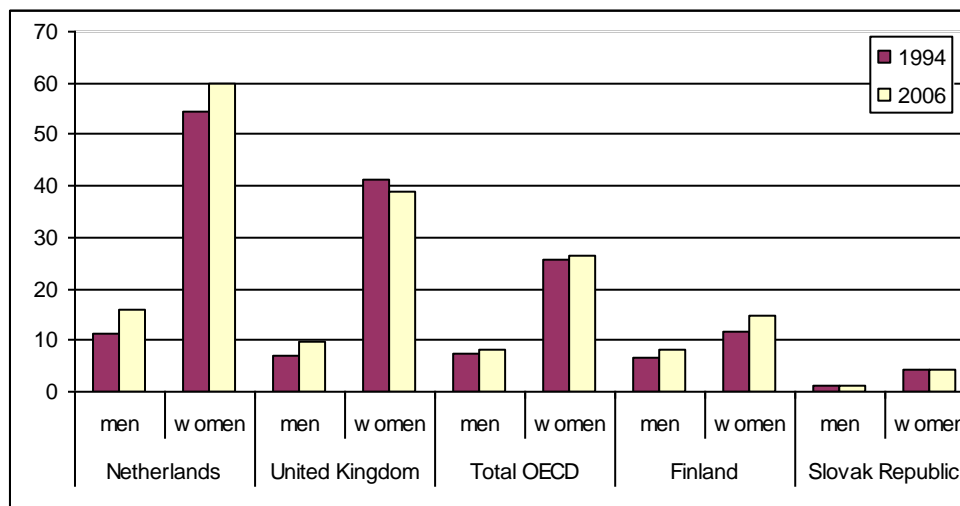
There has been a clear long-term decline in working hours across the main economies of the OECD, almost halving from the mid-19th century to the beginning of the 21st century. The second half of the 19th century and the early years of the 20th saw very similar levels and trends in Europe, Japan and the United States. It was in the United States where working time first fell below the others in the second quarter of the 20th century, with Europe catching up by the end of the century. In Japan, annual working hours levelled after WWII and fell again only towards the end of the century. There now appears to be convergence once again.

One of the consequences of this development is increasing amounts of leisure time for almost all working people in the OECD. This leads naturally to questions about how time spent outside the office, factory or farm is being spent. More leisure is one answer; growing numbers participating in voluntary societies and volunteer work suggest other approaches to time use are being followed.

There are other indications – continuing growth in productivity and the levels of skill required for jobs - that the intensity of work and stress levels may also have increased to counteract, to some extent, the shorter hours themselves.

➔ Growing number work part-time

Percentage of people working part-time in selected OECD countries



Source : OECD Database on Labour Force Statistics, 2007

There are also growing numbers of people, both men and women, working part time albeit measured over the much shorter time frame of 1994 to 2006, though many more women than men work part-time (Across the OECD, more than three times. The figure shows just how different the levels of part-time working can be from the countries with the highest and lowest incidence: 60% of women work part-time in the Netherlands compared with only 4% in Finland.

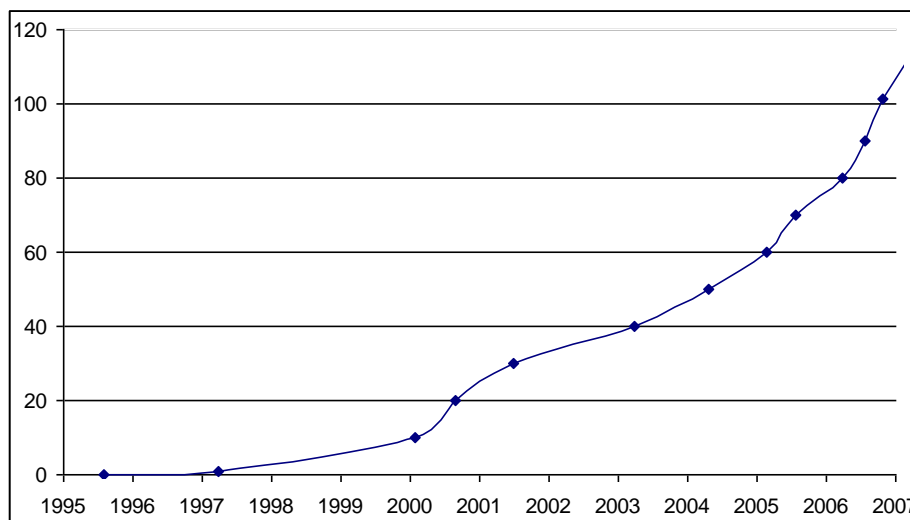
The Expanding World Wide Web

The Internet offers an excellent example of rapid technological developments and important social adoption and change. By itself, it is the system of computers and their physical connections. But this technology generates different software applications like e-mail and the World Wide Web, and functions such as e-banking, buying on-line, and e-government, or indeed simply watching TV or making phone calls in new ways. Both the Internet and its applications have increased rapidly in the past ten years.

For education, this has potentially far-reaching implications as ICT development continuously improves the possibilities for networking, distance learning and self-learning. How will this change or indeed even challenge the position of schools? With dramatic increases in the amount of information available, what do young people need to deal with all this information and to separate the important and unimportant, the good and the bad? Should schools provide it?

➔ The number of websites worldwide has increased very rapidly

Number of websites in millions



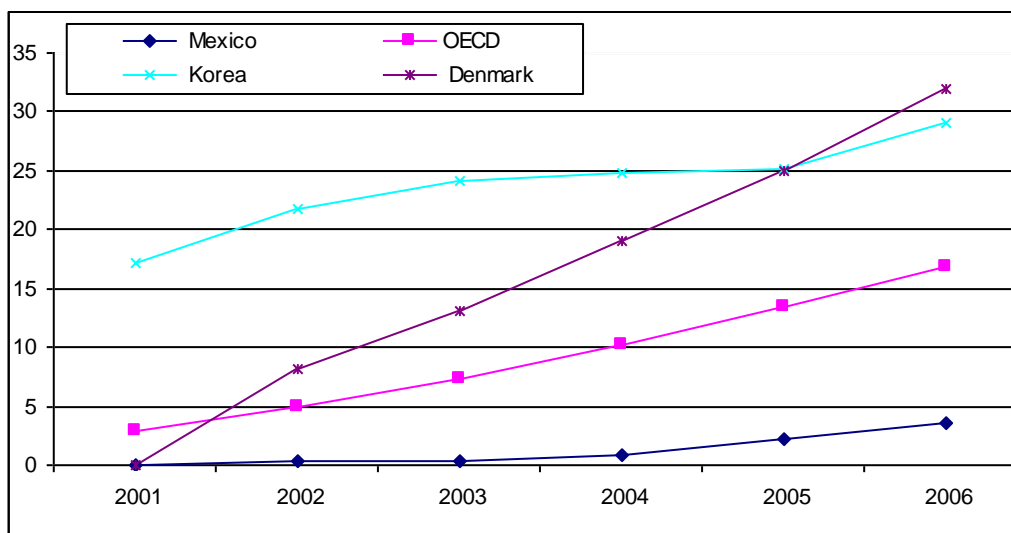
Source: Netcraft Web Server Survey (<http://news.netcraft.com>)

Internet use has exploded in the past ten years. A basic measure of this is the sheer number of websites, which went from 18,000 in 1995 to 100 million a little over a decade later. The number of internet users follows a similar pattern, burgeoning from 16 million in 1995 to over a billion in 2006. Broadband access has risen sharply this decade, and in Denmark for example it accounted for a third of the population by 2006.

The Internet is opening up new horizons and possibilities in life, including education. It offers an enormous and global reservoir of information which can be tapped into for a multitude of purposes. It offers cheap international communication, and allows for easier, on-line access to services and products, which are often cheaper with greater range of choice. Meanwhile, the Internet creates new problems as people cope with information overload and "information pollution" (like misinformation, pornography, junk e-mail, viruses etc). Copyright and privacy issues have acquired completely new dimensions.

➔ More people with broadband Internet access

Percentage of inhabitants with broadband Internet, OECD average and in selected countries



Source: OECD www.oecd.org/sti/ict/broadband (Broadband subscriptions as a percentage of total population; 'broadband' for the OECD data means download speeds equal to or faster than 256 kbit/s.)

Equity and access issues also arise. There is a "digital divide", both within the affluent OECD societies and between the richer and poorer countries. Research shows that access to the internet is greater with higher levels of income and educational attainment. Men tend to have more often access than women, as do households with children compared with those without, and younger age groups compared with their parents and grand-parents. With time and spreading access, however, the differences in access have tended to get smaller (in OECD countries at least).

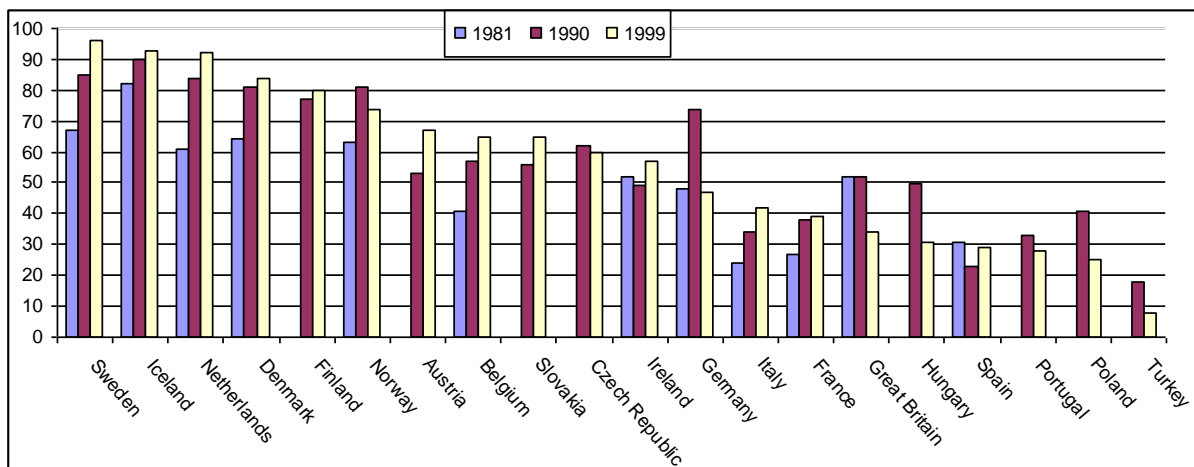
Less social interaction?

Much has been debated about whether people are less and less engaged in social activities, clubs, societies and teams and whether they are correspondingly leading more individualistic life-styles. Is the fabric of society disentangling if social activities are on the decline and civic attitudes are neglected? (Even activities that may appear trivial serve the valuable functions of creating trust and co-operation and contribute to local communities, societies and economies.) On participation in voluntary activities, the evidence does not support the gloomiest prognoses; however, in some countries general levels of trust are worryingly low.

Social interaction and trust are very important to schooling. If connectivity and trust are high, schools will be able to rely on strong social support in pursuit of their main goals. On the other hand, if connectivity and trust are low, schools (and teachers) might end up tackling the challenging task of replacing traditional sources of social interaction and trust-building and will need to educate children without a strong community support to fall back on.

➔ No General Decline in Membership of Voluntary Organisations

Percentage of respondents involved in at least one voluntary association



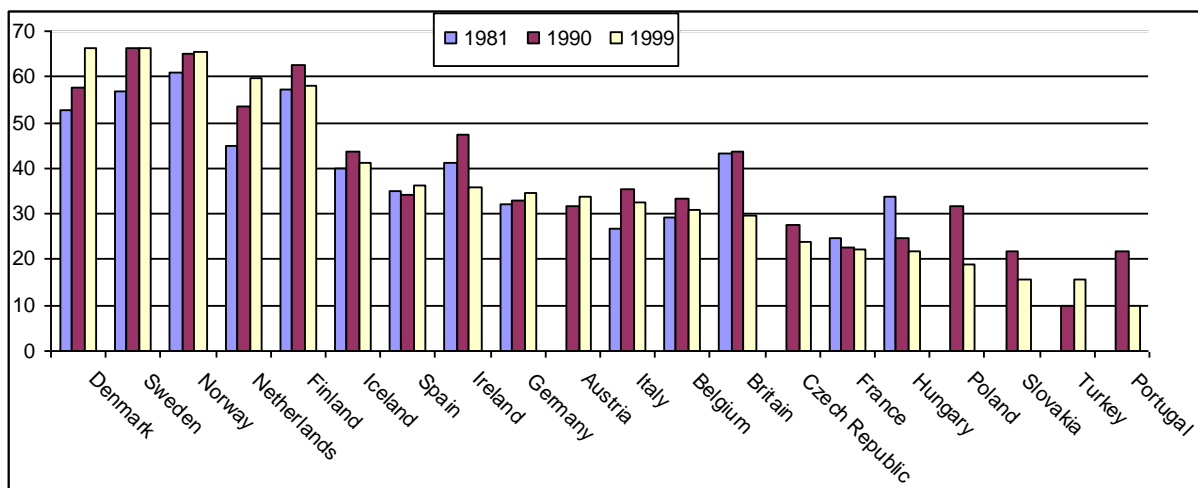
Source: World Value Survey 1980, 1990; European Value Survey 1999

Despite declining involvement in certain large traditional organisations, such as churches and trade unions, the data do not confirm declining organised social activity, at least not across the range of countries with through-time evidence. In about half these countries, involvement in voluntary organisations was at about 60% or more of the adult population and actually has increased in those with the higher incidences of social engagement, the Nordic countries prominent among these.

Perhaps as worrying as the much lower levels of engagement in other countries, at least as measured by involvement in voluntary organisations, is the fact that this is declining in several of these. In short, the gaps are tending to widen across countries.

→ Trusting Others: wide variation, no single trends

Percentage of respondents saying that in general they “trust people”



Source: World Value Survey, 1990, 1990; European Value Survey 1999

Asking people the question: “do you in general trust other people?” - with the possible answers “yes” or “you can’t be careful enough” - reveals again that in the Nordic countries and the Netherlands trust tends to be high (and in some cases even rising). In other European countries – including Britain and several in Southern and Eastern Europe - it is lower and falling. These are, of course, very general questions and hide much important detail. However, with only a third or less of populations reporting that they do not trust others, this does not create a promising environment in which schools can flourish. Broadly, low levels of voluntary membership correlate with low trust levels, though the fit between the two is not a precise one.

PART III

What might schooling look like in the future?

Scenarios for further reflection

An infinite variety of scenarios could be generated from societal and educational trends, multiplied by different contexts, purposes, and stakeholders. The six scenarios of the *Schooling for Tomorrow* Project, therefore, are highly selective among possible futures.

They cover a range of extremes: from “stable bureaucratic systems” to “system meltdown”, from strong schools to disappearing schools. Each depicts a distinctive configuration resulting from societal change or failure to respond to such changes.

Bureaucratic system	One scenario depicts schools as unaffected by external trends and reforms. They are strong top-down bureaucracies, closed from outside pressure.
Re-schooling	Two scenarios depict futures where schools are strengthened by strong cultures of equity and by consensus about their value. They have undergone root-and-branch reform as systems and are dynamic. In one scenario, the school remains highly distinctive, in the other it becomes a leading feature of communities.
De-schooling	In two scenarios schooling moves from formal institutionalised systems into more diverse, privatised, and informal arrangements. Schools themselves may even disappear. These changes are demand-driven or result from the growth of alternatives which are more efficient for learning.
System meltdown	The last scenario depicts a crisis where the authorities have not been able to respond to a mass exodus of teachers, resulting in a breakdown of the system.

This Part presents first what is special about the *Schooling for Tomorrow* scenarios, and what they are not (Sheet III.2). After an overview of the scenarios and their shared framework (Sheet III.3), it presents each of the six scenarios, using the same matrix framework, while the narrative parts explain their main characteristics, and the likely features of the society in which the scenarios could occur (Sheets III.4-9).

