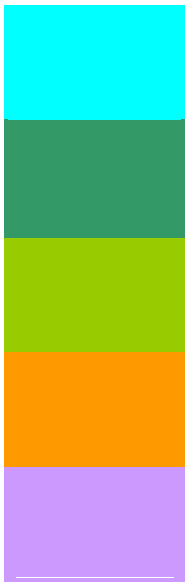
OECD Schooling for Tomorrow Series



The Starterpack

Futures Thinking in Action

OECD

Centre for Educational Research and Innovation
CERI
Centre pour la recherche et l'innovation dans l'enseignement

PART I

Getting started

Futures thinking in education

We are living in an increasingly global world. This brings many challenges and problems, but it also makes it much easier to learn from those in other countries about areas of common interest. It helps those concerned about education in different countries to understand new developments and identify good practice.

International sharing of experience and knowledge is at the heart of the *Schooling for Tomorrow* to help countries respond to new developments and concerns.

Such international sharing is at the heart of the *Schooling for Tomorrow* Project (SfT). It has developed a wealth of insights into *futures thinking* in education. It has generated expert analyses, case studies, country reports and publications related to schooling and learning and what these might be like in the future and to help shape the future.

To introduce these insights to a wider audience, *Schooling for Tomorrow* has developed this Starterpack. Individuals, groups and stakeholders just embarking on *futures thinking* in education can use it to become aware of what might be done and now to be quickly operational as they set out in this direction. We know that the demand is there as various countries, organisations, and individuals have expressed interest in the experience.

"Getting started" provides an introduction. It introduces the Starterpack's scope and intended audiences (Sheet I.2). It puts *Schooling for Tomorrow* into the wider context of OECD's interest in *futures thinking*, and explains what *futures thinking* stands for (Sheet I.3), and the reasoning behind it (Sheet I.4). Finally it outlines the specific approach used in *Schooling for Tomorrow* (Sheet I.5).

Part I: Getting started

Futures thinking in education

The Starterpack

This Starterpack shares the core experiences and lessons found so far in the *Schooling for Tomorrow* Project. It explains the Project's approach and presents the elements which have proved promising and effective in developing *futures thinking* initiatives for education.

Scope and audience

The Starterpack is an "appetizer" of the tools developed to identify desirable and possible futures for schooling and the experiences of those who have used them.

The Starterpack does not pretend to present all information from the Project. Instead, it draws a selection of what we consider to be among the most useful elements for country-based initiatives or those in education wishing to embark on *futures thinking*. Or indeed, it may be useful to those who just wish to get a flavour of what *futures thinking* in education and the *OECD/CERI Schooling for Tomorrow* Project is all about. The Pack is therefore an information brief, an appetizer, and a kick-starter all in one.

The target audience is all stakeholders in educational policy and practice:

- Policy-makers in ministries of education and other levels of government
- National and international organisations
- Professional networks and institutions
- Practitioners – school leaders and teachers
- Other stakeholders with an interest in education, including parents

What unifies these audiences is their interest in reflecting on – and influencing – the future of schools, learning, and systems.

Contents and use

The Starterpack has five main Parts (see matrix below) in different sheets, each of which is devoted to a specific issue. Each Part has a short introduction outlining what is presented in the chapter.

The Starterpack is a flexible tool to be used actively and selectively depending on the purpose in hand. Individual sheets can stand alone or be used in combination with others. They are intended to support work in various settings, such as providing an action brief on the use of *futures thinking* or informing a workshop on scenario development or a group using *Schooling for Tomorrow* insights to enhance its own design process.

Users themselves may wish to enhance the Starterpack as a working tool. For example, they may wish to enrich it by adding country-specific material, *e.g.* current education policy and strategy, school development plans, and project documents.

Overview

This matrix gives an overview of the Starterpack to help navigate through it, with the numbering and thematic divisions of the five parts indicated by colour codes. The background will be further explained in the rest of this chapter (Sheets I.3-I.5).

Introduction	Trends	Scenarios	Methodologies	Experiences
PART I	PART II	PART III	PART IV	PART V
1 **Getting started**	1 **What is shaping the future of schooling?**	1 **What might schooling look like in the future?**	1 **How to go about it?**	1 **Futures thinking in action**
2 The Starterpack	2 How to use trends?	2 The SfT scenarios	2 Using the SfT scenarios	2 The outset
3 The SfT Project	3 Fewer Children	3 Overview	3 Using the SfT Trends Tool	3 Getting started
4 What and why?	4 Inequality	4 Scenario 1	4 Basic considerations	4 The process
5 The approach	5 The Global Economy	5 Scenario 2	5 Other future-oriented methodologies	5 Benefits
	6 Working Less	6 Scenario 3		6 Lessons learnt
	7 The Expanding WWW	7 Scenario 4		
	8 Less Social Interaction?	8 Scenario 5		
		9 Scenario 6		

The *Schooling for Tomorrow* Project

Schooling for Tomorrow is one of the central projects within OECD's *Centre for Educational Research and Innovation* (CERI). The Centre has established an international reputation for pioneering educational research, opening up new fields for exploration, and combining rigorous analysis with conceptual innovation.

Its origins and challenge

"Building new futures for education" is one of six strategic objectives which have been set for the OECD's educational work by senior policy-makers in its member countries to fulfil its mission of "assisting members and partners in achieving high quality lifelong learning for all".

> **"The Directorate for Education's mission is to assist members and partners to achieve high quality lifelong learning for all, contributing to personal development, sustainable economic growth and social cohesion."**
>
> *CERI brochure 2007*

CERI began its work on futures in the late 1990s. Its focus has mainly been on schools and schooling, but the approach to futures work has since stimulated new departures so as now to include higher education in the *University Futures* Project.

The origins of work on schooling futures began at an OECD meeting on lifelong learning of countries' Ministers of Education in 1996. The ministers pinpointed the crucial role of schools in laying the foundations for lifelong learning and asked the OECD to identify and assess different visions for schooling. The project was officially launched at an international conference in Hiroshima in November 1997.

At the core of this work is the persistent paradox that although education is about long-term investment in people and society, its decision-making tends to be predominantly short-term. Longer-term perspectives in policy and practice are the exception rather than the rule. We lack even the tools and terminology to develop such perspectives.

Schooling for Tomorrow set out to develop frameworks and tools to be useful for people in many different situations in many countries for thinking about alternative futures for education.

How far it has got

Schooling for Tomorrow has developed into an internationally-recognised Project through stages. As regards the specific *futures thinking* work this has gone through three phases.

Phase One laid the groundwork, with analyses of trends and methodologies. The key outcome was a set of six scenarios for schooling systems.

Phase Two used the six scenarios in co-operation with several volunteer countries and school systems to explore how *futures thinking* could inform concrete challenges for educational leadership and policy-making.

Phase Three, which began in mid-2005, has expanded to more countries, collecting results more systematically. They collaborate on applications of *futures thinking* to educational reform and innovation. The recorded results will form part of the *Schooling for Tomorrow* international knowledge base, which will be consolidated and systematised for online use by educators, leaders and policy-makers. Finally, an updated and refined "Trends Tool" is being developed based on OECD research and analysis to further help users work with *futures thinking*.

What is has to offer

Schooling for Tomorrow now has four different forms of *futures thinking* material and information made available in different forms (publications, knowledge base, shorter published materials, etc.):

1 Ready-to-use scenarios

This is a set of six scenarios depicting alternative futures for schooling. They have been instrumental in kick-starting *futures thinking* processes in educational contexts.

2 Trends Tool

This tool consists of analyses of the trends that seem most likely to influence the development of education systems in OECD countries, directly or indirectly. Its purpose is to ensure that the scenarios are integrated and consistent within their wider environments.

3 Practices

Based on the experiences made in a range of countries, *Schooling for Tomorrow* can illustrate how *futures thinking* in education has been applied and what has been learnt through these practices.

4 Reflections on methodologies

Partly based on the practical experiences as well as more theoretical contributions, the project has also reflected on different methodological approaches that can be particularly useful for *futures thinking* in education.

The scenarios, the trends, and practices/methodologies define the main sections of this Starterpack on *futures thinking*.

Under the broad *Schooling for Tomorrow* umbrella, we have also looked at related innovation and learning issues: understanding the demand as well as the supply side; moves towards "personalising" education; networking; and the role of ICTs; with recent work starting on new models of learning and innovations.

What and why?

Futures thinking offers ways of addressing the future; it is not about gazing into a crystal ball. It illuminates the ways that policy, strategies and actions can promote desirable futures and avoid those we consider to be undesirable. It is about stimulating strategic dialogue, widening our understanding of the possible, strengthening leadership, and informing decision-making.

What is *futures thinking*?

Futures thinking allows us to reflect on fundamental change over the next 10, 15, 20 or more years.

It offers a multi-disciplinary approach to examining transformations in all major areas of social life, including education. It probes beneath the surface of received opinion in order to identify the dynamics and interactions that are creating the future.

While the future cannot be predicted, one can look forward to a range of possible futures and ask which of these are the most desirable for particular groups and societies. There is a variety of methods to do so – qualitative and quantitative, normative and exploratory. They help illuminate what is possible, the choices for decision-making, and can inform the assessment of alternative actions.

Why *futures thinking*?

There is a tendency toward short-term thinking in both the public and the private spheres. In government, election cycles often determine the time horizon. Businesses may often focus on immediate financial reporting periods.

Futures thinking introduces perspectives to look beyond the straitjackets of immediate constraints. Existing attitudes and frameworks for action, far from being immutable, are open to change. *Futures thinking* can help to create an environment for deeply informed decision-making, ideally to smooth the transition toward a future with a sustainable balance between short- and long-term policy goals.

To mobilise a system for sustainability, its leaders must go beyond fine-tuning the existing system. They must be willing to re-think and alter its major components.

Why is it pertinent to education?

Futures thinking is relatively under-developed in education compared with a number of other policy sectors, such as energy, the environment, transport and pensions. This is despite education's fundamental impact on individuals and societies over the long term.

Futures thinking is pertinent to education because it clarifies and deepens understanding of the major forces which drive change in education systems, schools and communities.

Much educational decision-making focuses on the short term, looking to solve immediate problems or make established practice more efficient. Education's institutional cultures are much more geared up for looking backwards at the past than forwards into the future.

Governments and educational sector stakeholders invest resources, time, and effort in the present for a return that will come years if not decades later.

The neglect of the long-term becomes more problematic in a complex, rapidly changing world, with a growing number of stakeholders in schooling. As OECD countries move rapidly towards becoming knowledge societies, with new demands for learning and new expectations of citizenship, strategic choices must be made not just to reform but to reinvent education systems so that the youth of today can meet the challenges of tomorrow.

Futures thinking enhances the capacity to anticipate change, which in turn helps systems to grasp opportunities, cope with threats, develop creative strategies, and choose pathways of development paths. Rather than simply responding to change, education leaders and organisations can anticipate and deal with it proactively.

The approach

The *Schooling for Tomorrow* Project has focused its interest on *educational futures thinking in action*. This refers to 1) tools for *futures thinking*, including methodological reflections and analyses of the possible developments that will shape schools in the future; and 2) active collaboration with countries and regions in this endeavour, applying and testing the tools. Together, this is building an international knowledge-base on *futures thinking* in education.

The schooling focus

The institutionalised arrangements of schooling are regarded by many futurists almost like dinosaurs from an earlier industrial era rather than appropriate for learning in the 21st century. For those in education, however, this is the daily reality. *Futures thinking* is about changing tomorrow through action, not just critique, today.

The ultimate beneficiaries of successful *futures thinking* are the next generations of children. The immediate beneficiaries are those responsible for taking decisions about the educational system in which they will grow up.

The Project considers the notion of "schooling" as all the arrangements for organised learning for young people: formal, non-formal or informal education during childhood and youth. The functions of learning during this period tend to be quite distinct from those of learning that comes later.

"Schooling" provides a manageable focus within the vast canvas of future learning, and is of immediate relevance to policy-makers, practitioners and other stakeholders engaged in education.

Some have asked why the scenarios are not about the future societies, cultures and economies in which education is located. The reason is two-fold. First, we do not believe that education is totally determined by their wider environments. Second, our aim has been to develop tools of relevance to people engaged in education, not construct futures that they may think are totally beyond their control.

Tools and analysis

Scenario development is central to the *Schooling for Tomorrow* Project. Scenarios have been described as "internally consistent and coherent descriptions of hypothetical futures, reflecting specific perspectives on past, present, and future developments". The word "hypothetical" is critical – they are not intended to be totally realistic but to help clarify the directions in which we are going and how we might influence that pathway.

They are intended to serve as a basis for action, by helping decision-makers think strategically about institutional change, and by illuminating the links between policies and outcomes.

The scenarios are informed by OECD research and analysis. A Trends Tool reported next helps to anchor the scenarios in today's circumstances, and to consider major trends and their consequences in education and society. Alongside more tangible matters such as the ageing society, the knowledge economy, globalisation, and technology, it is also important to consider less-tangible ones such as changing values, social fragmentation, new forms of governance, to examine deeper processes going on.

Through these tools and analysis, *Schooling for Tomorrow* seeks to stimulate reflection on the major changes occurring in education and its wider environment, and to promote long-term approaches in decision-making.

Collaboration with countries

Schooling for Tomorrow is collaborating with initiatives in several countries, which have agreed to develop, use, and evaluate *futures thinking* in order to meet existing challenges within their educational sector. So far, much of this work has been most effective in capacity-building for strategic thinking and strengthening leadership.

The number of country-based "*futures thinking* in action" initiatives has expanded in Phase 3, covering an even wider variety of countries and initiatives.

These initiatives rely on the expertise and commitment within their own countries, while benefiting from OECD material and experience in other countries.

The country-based participation and reporting on aims, processes and effectiveness is building up an evidence base on *futures thinking in action* for a wider audience than the immediate participants.

Schooling for Tomorrow as an international project in application of scenario methodology is about a relatively new tool in the public sector especially in education. It has much longer been used in the private sector.

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 then 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, possible 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.

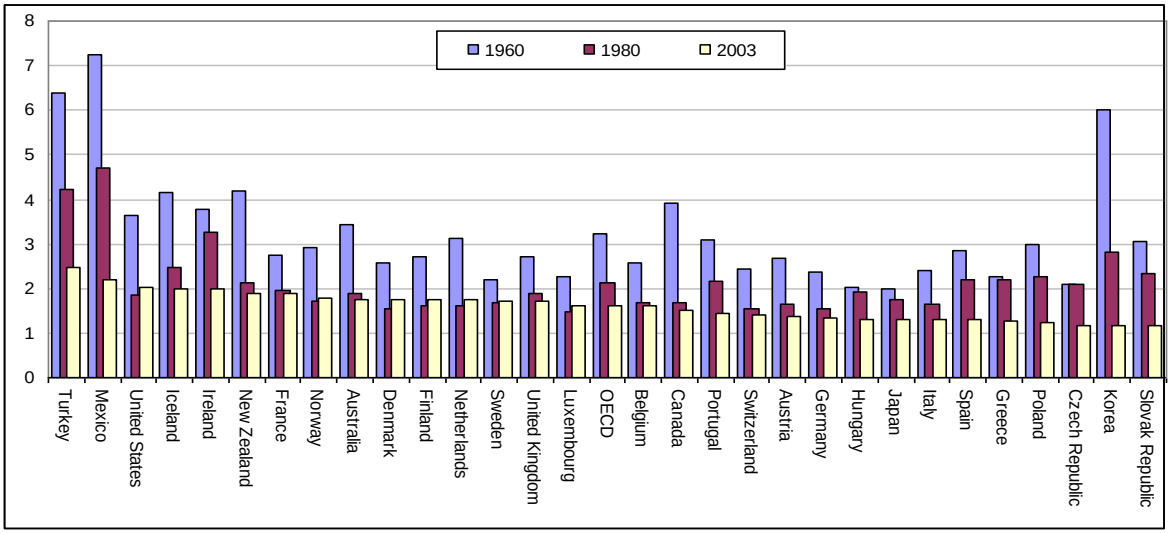
Fewer Children

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



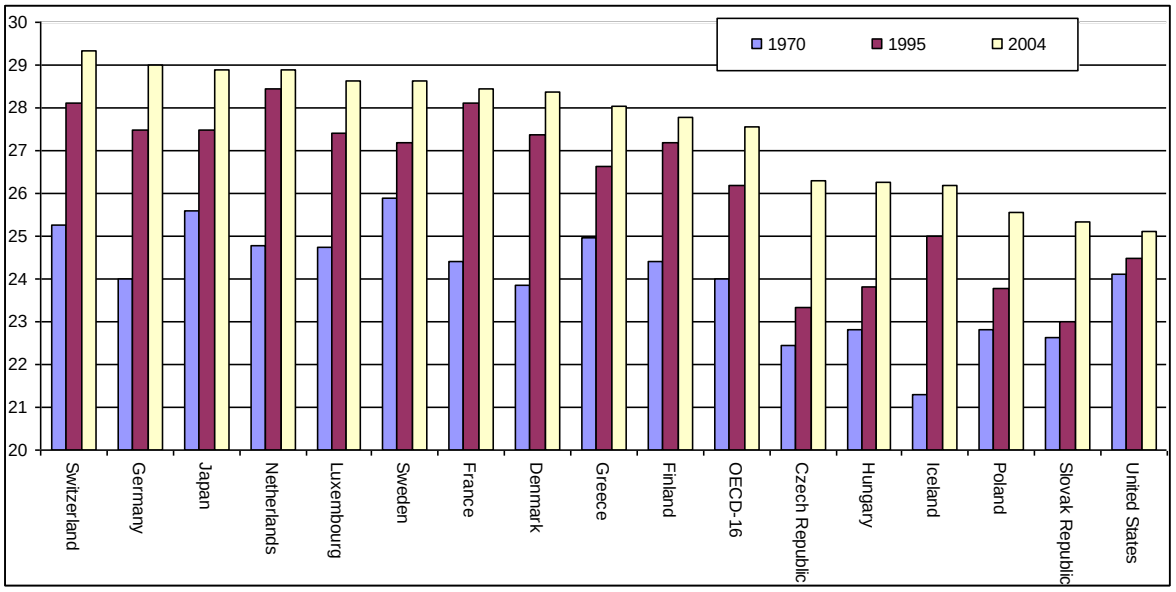
Source: Health at a Glance, OECD 2005

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.

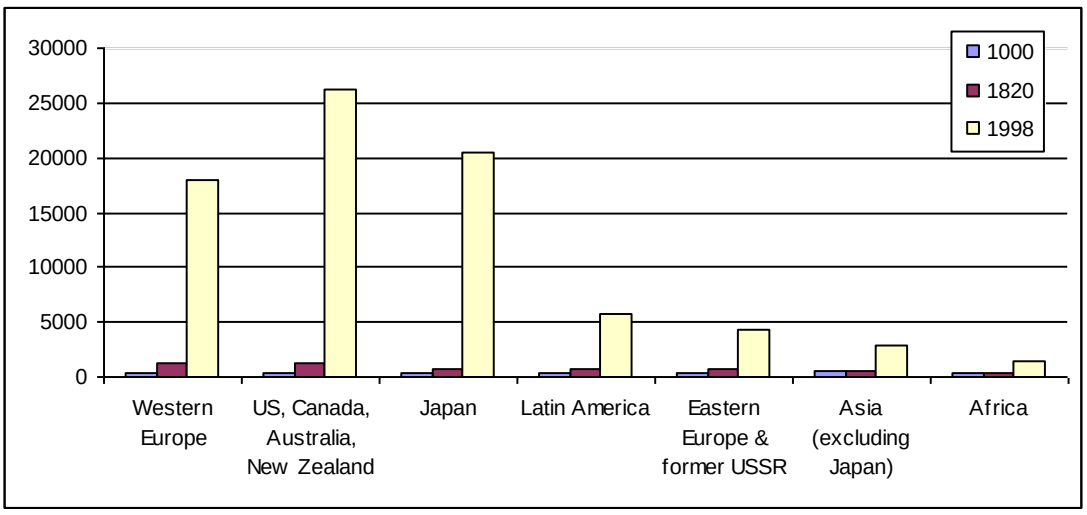
Inequality: international and national

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)

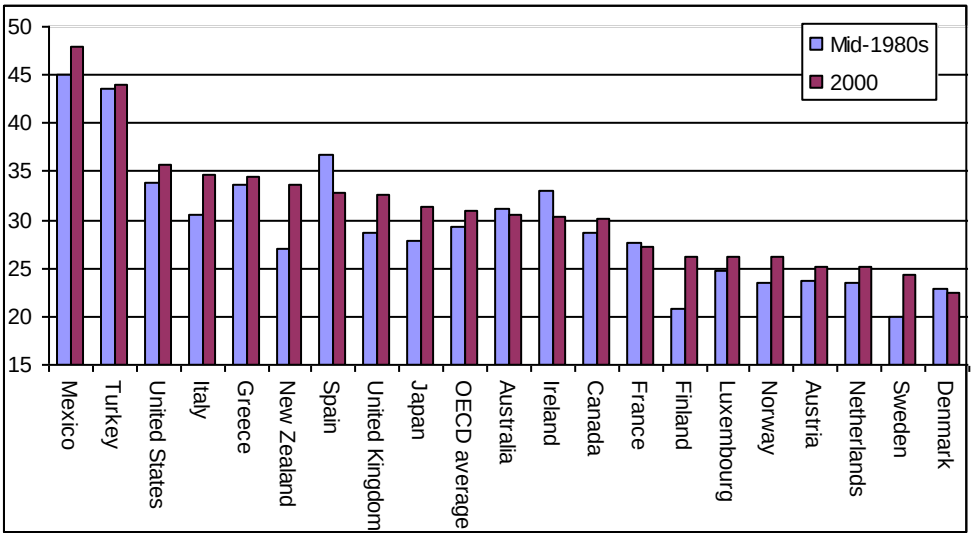


Source: The World Economy, OECD 2003

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.

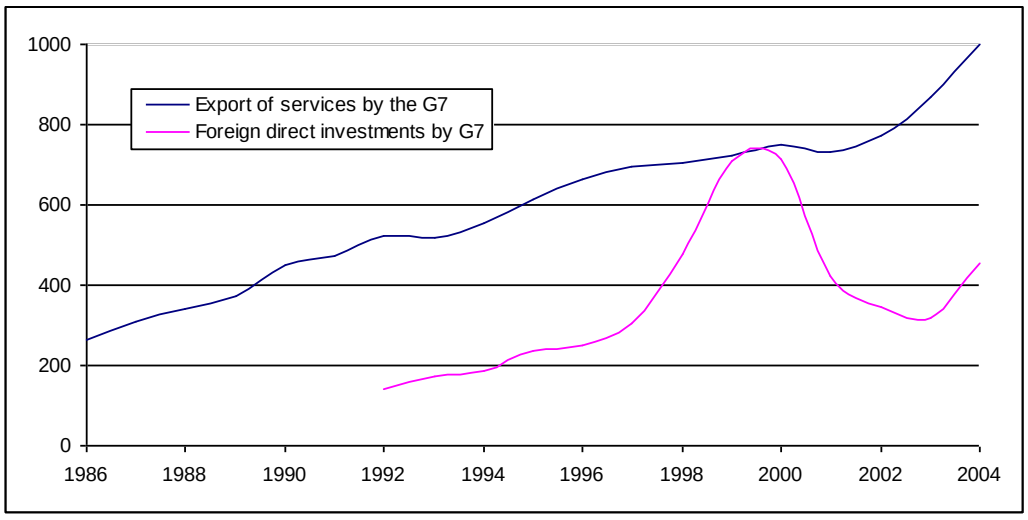
The Global Economy

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)

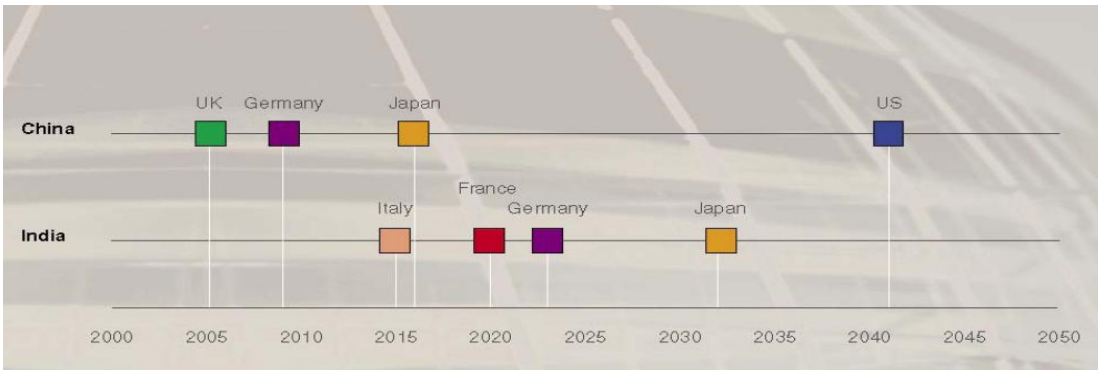


Source: Globalisation Indicators, OECD 2007

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 massive1000 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.

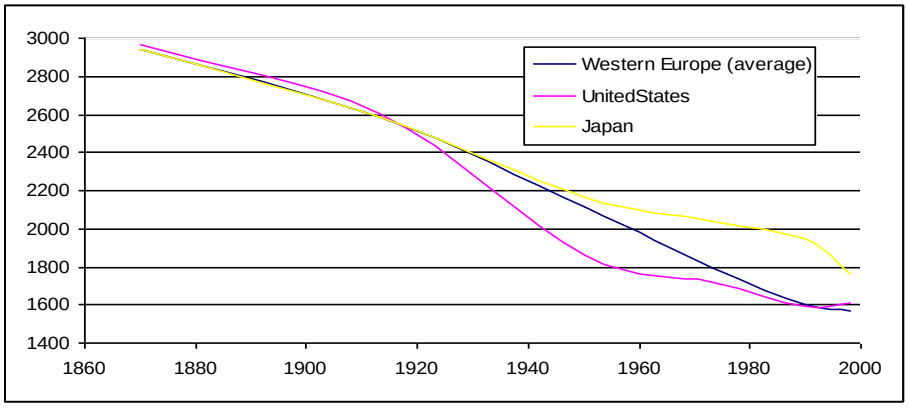
Shorter working hours

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

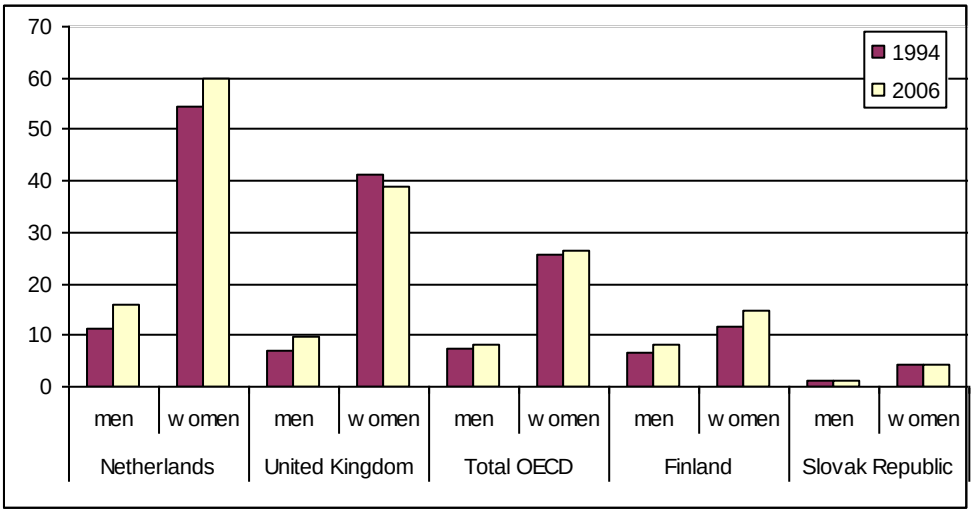
There has been a clear long-term decline in working hours across the main economies of the OECD, almost halving from the mid-19th century to the beginning of the 21st century. The second half of the 19th century and the early years of the 20th saw very similar levels and trends in Europe, Japan and the 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.

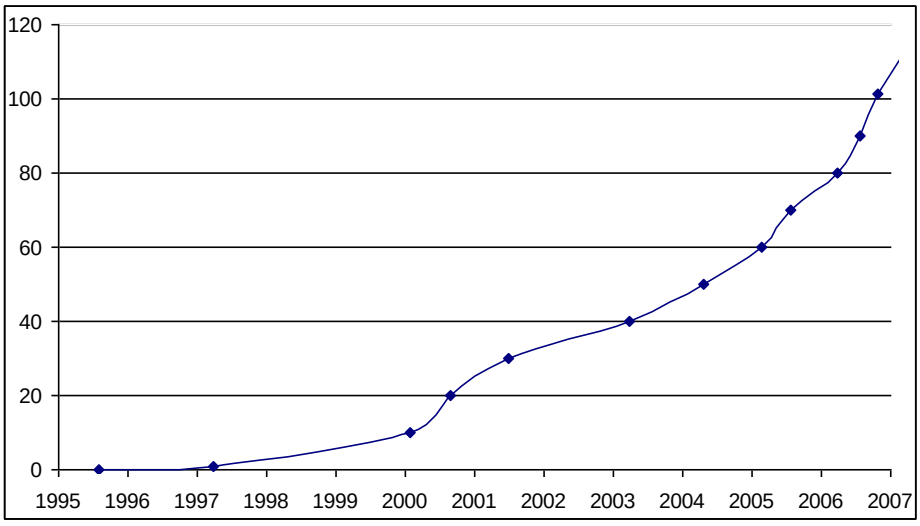
The Expanding World Wide Web

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



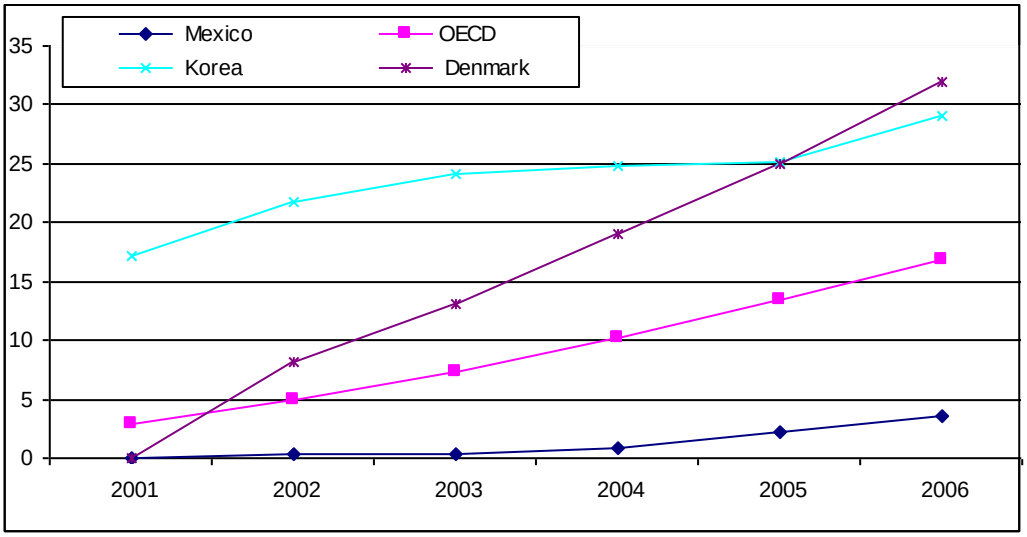
Source: Netcraft Web Server Survey (http://news.netcraft.com)

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).

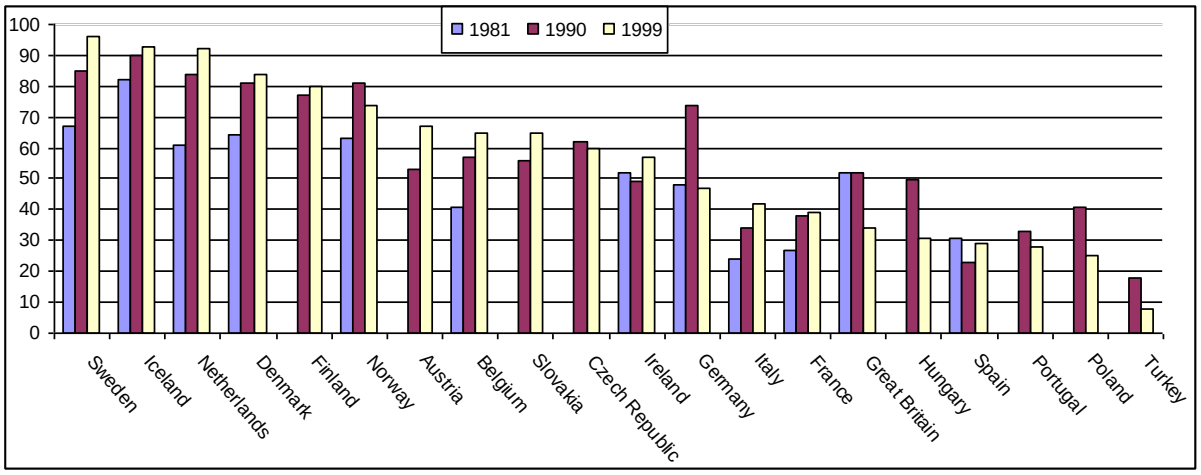
Less social interaction?

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



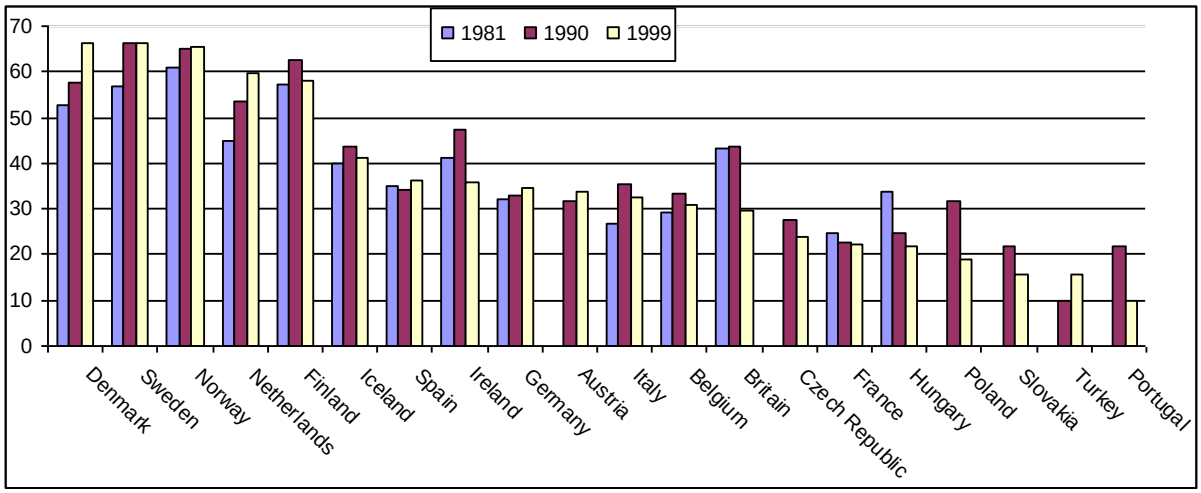
Source: World Value Survey 1980, 1990; European Value Survey 1999

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).

Part III: What might schooling look like in the future?

Scenarios for further reflection

The *Schooling for Tomorrow* scenarios

The *Schooling for Tomorrow* scenarios propose snapshots of six possible futures for schooling to help focus thinking on where we are going in education. They have been extensively used to inform policy debate and professional development in many countries.

What is special about the *Schooling for Tomorrow* scenarios?

The *Schooling for Tomorrow* scenarios were designed to explore possible futures for schooling for use by different stakeholders in education – from policy-makers to teachers and parents. They cover organised learning from the primary through late secondary education, but not rigidly demarcated. The scenarios are set around 15 to 20 years in the future – long enough for significant change to occur, but not so far off as to be remote to any but futurists.

The scenarios are "ready-to-use" tools that can be adapted, combined or totally reinvented, using the same model as a point of departure.

The scenarios are "outcome-based" snapshots of the future, depicting possible end states of specific development paths. These outcomes might give rise to new developments, becoming starting points for new futures. The focus on education, rather than broader social or economic scenarios, has been deliberately chosen to give educators tools using variables with which they are familiar.

All the scenarios share the same five-dimensional framework, so that one can look at similar issues in different futures, "attitudes, expectations, and political support", "goals and functions" of education systems "organisations and structures", the "geo-political aspects" and "the teaching force". The number of dimensions can be adapted according to the purpose in hand, but keeping the same dimensions in each scenario facilitates comparisons.

The scenarios are "ideal types" that are not expected to occur in pure form in the real world. They deliberately exaggerate features to help clarify options and choices. This makes them sometimes provocative, even alarming. This helps to galvanise attention.

What they are not

In addition to understanding what the *Schooling for Tomorrow* scenarios are, it is also important to understand what they are not.

They are not *predictions* seeking to forecast futures as accurately as possible. Prediction is doomed to failure and this is not the aim. The value of *futures thinking* is in opening minds to consider new possibilities and to deal with change.

Secondly, these scenarios *are not visions* though others may use them to clarify their own visions. They are descriptive of possible futures, including those we may not like as much as those we may.

Thirdly, they refer to learning systems (schooling) not schools as organisations. They are not the "school of the future".

Lastly, the *Schooling for Tomorrow* scenarios do not spell out all the steps that might lead to these futures. We leave that to users to work out for themselves.

The scenarios presented

Scenarios can take various forms according to the method used and purpose of the exercise for which they are used. The *Schooling for Tomorrow* scenarios are presented in a matrix describing their features along key dimensions. This is accompanied by a narrative explaining the characteristics of each scenario and its likely social context.

Overview

Six scenarios

From "stable bureaucratic systems" to "system meltdown"

BUREAUCRATIC SYSTEM

1 Schools in **Back to the Future Bureaucratic Systems**

This scenario shows schools in powerful, bureaucratic, systems that are resistant to change. Schools continue mostly with "business as usual", defined by isolated units – schools, classes, teachers – in top-down administrations. The system reacts little to the wider environment, and operates to its own conventions and regulations.

RE – SCHOOLING

2 Schools as **Focused Learning Organisations**

In this scenario, schools function as focal learning organisations, revitalised around a knowledge agenda in cultures of experimentation, diversity, and innovation. The system enjoys substantial investment, especially to benefit disadvantaged communities and maintain high teacher working conditions.

3 Schools as **Core Social Centres**

In this scenario, the walls around schools come down but they remain strong organisations, sharing responsibilities with other community bodies. Much emphasis is given to non-formal learning, collective tasks and intergenerational activities. High public support ensures quality environments, and teachers enjoy high esteem.

DE – SCHOOLING

4 The **Extended Market Model**

This scenario depicts the widespread extension of market approaches – in who provides education, how it is delivered, how choices are made and resources distributed. Governments withdraw from running schooling, pushed by dissatisfaction of "consumers". This future might bring innovation and dynamism, and it might mean exclusion and inequality.

5 **Learning in Networks** replacing schools

This scenario imagines the disappearance of schools per se, replaced by learning networks operating within a highly developed "network society". Networks based on diverse cultural, religious and community interests lead to a multitude of diverse formal, non-formal and informal learning settings, with intensive use of ICTs.

CRISIS

6 Teacher Exodus and **System Meltdown**

This scenario depicts a meltdown of the school system. It results mainly from a major shortage of teachers triggered by retirement, unsatisfactory working conditions, more attractive job opportunities elsewhere.

The framework

Five dimensions for the six scenarios

1 Attitudes, expectations, political support	This dimension covers public and private attitudes towards schooling, including the depth of political support for schools and learning in general. It looks at how schools are valued, and the roles they are expected to play in communities and society at large.
2 Goals, functions, equity	This dimension covers what schooling is meant to achieve. It outlines the main curricular and extra-curricular functions, accreditation arrangements, and the settings for learning both inside and outside schools. It also looks at social and cultural outcomes of schooling.
3 Organisations and structures	This dimension describes the formal and non-formal organisation of schooling. It covers the different roles for the public and private players in the delivery of education, the involvement of community bodies, as well as the extent to which ICTs are used.
4 The geo-political dimension	This dimension looks at the local, national, and international environment and arrangements for schooling. This includes educational governance, the nature of service providers, and responsiveness to external pressures.
5 The teaching force	This describes who "teachers" are – those responsible for "delivering" education. It considers working conditions, status, and careers. It includes networking, motivations and rewards, and the demarcations between teachers' roles and those of students, parents, and various others whose primary roles lie outside education.

Scenario 1: "Back to the Future Bureaucratic Systems"

National school bureaucracies are robust enough to resist pressures for change, despite the grumbling of parents and the media. The system is the key feature, relatively closed and top-down but with a large measure of autonomy for individual teachers in isolated classrooms.

Characteristics

In this scenario, schools are anchored in powerful bureaucratic systems. Strong pressure for uniformity and the fear of change combine to make the schools resist fundamental transformation, despite criticism of the school system by the public and the media.

In this scenario, schools exist in relative isolation from the wider environment, and its major societal and technological trends. School reform cannot penetrate into the roots of the system and school practice remains essentially unchanged. How long can the system resist pressures from the changing labour market and increasingly visible social inequalities?

Decision-making is generally hierarchical, and "outsiders" have little influence on a system that is primarily organised by its own internal logic, within national or regional contexts.

Formal classroom teaching, with teacher-to-student learning settings, is the norm, with little room for non-formal and in-formal learning and community interaction. There is little perception of lifelong learning as schooling operates to its own self-contained conventions.

Education is solidly rooted in the public consciousness and traditional means of delivery, but its financial and human resources are stretched as the schools are assigned additional new tasks and responsibilities, given problems arising in families and communities.

Their contexts

The bureaucratic model is consistent with a continued reliance on hierarchical decision-making and centralised sovereignty over education. It might also depend on a strong elite culture, with the diplomas of formal education continuing to dominate as the currency of social selection and recognition of competence.

This scenario assumes a degree of societal trust in public institutions – the powerful state system is preferred over the perceived risks of systems determined by diversity and autonomy, or by the market. Despite this trust, society is unwilling to make the large-scale investments that might be necessary for radical reforms as in "re-schooling".

Scenario 1: Schools in bureaucratic systems

In five dimensions

Attitudes, expectations, political support	■ Resistance to radical change despite parents, employers and the media expressing dissatisfaction with schools. ■ No major increase in overall funding – the continual extension of schools' duties stretches resources. ■ Education, especially schooling, is politicised and often at the fore of party politics.
Goals, functions, equity	■ Much focuses on curriculum, enforcement of standards, and the promotion of formal equality. ■ Formal certificates considered the main passports to economic and social life, as well as next steps in the education system. ■ Inequalities of opportunity and results continue despite policy emphasis on formal equality.
Organisations and structures	■ Schools knitted together into national systems with complex administrative arrangements. ■ Dominance of the single unit – school, classroom, teacher – in relative isolation from each other. ■ No radical change in the organisation of teaching and learning despite greater ICT use. ■ Very patchy connections between schools and the community.
The geo-political dimension	■ The nation [or state in federal systems] still the main locus of political authority, even if under pressure. ■ The corporate world, the media, and multimedia organisations express interest in education markets, but their influence remains minor. ■ Pressure from globalisation, including international surveys of educational performance.
The teaching force	■ Highly distinct teacher corps, with strict rules of entry. ■ Strong unions and associations resist change. ■ In hierarchal decision-making structures teacher classroom autonomy may be strong.

Scenario 2: "Schools as Focused Learning Organisations"

Schools could respond to the demands of the knowledge economy by developing into "learning organisations" focused on diversity, experimentation and innovation. These schools would contribute to the development of a highly competitive society.

Characteristics

In this scenario, education is focused on knowledge-building and laying solid foundations for lifelong learning. Schools are revitalised around a knowledge agenda: experiment and innovation provide the basis for students to develop academic competence as well as others such as artistic talents.

This scenario is consistent with the trend of a *globalising economy*, the growth of *knowledge societies* based on R&D, specialisation, and adaptability for *lifelong learning*, and the technological progress of the *information age*. But what are the mechanisms to transform schools into "linchpin institutions" that support both quality and *equality*?

There is a diversity of organisations and settings, and some schools develop close links and working networks with tertiary education, some with enterprises such as media and technology companies. This scenario demands far-reaching equality among schools – in status, conditions and prospects – for otherwise the focused learning organisation would not be the typical school.

ICT is prominent, and ICT use is evaluated regularly. New forms of evaluation and competence assessment flourish, reflecting the aptitudes and achievements of all learners.

Teaching professionals are motivated by highly favourable working conditions, such as small learning groups and a strong emphasis on team working and educational R&D.

Their contexts

The scenario is demanding not only in terms of education, but in the broader social and economic environment that would support it. It assumes very high levels of public support and trust in institutions, and generous funding from diverse public and private sources.

The scenario also assumes an affluent, high-skill society with a strong sense of equity, where schools are expected to be at the forefront of new developments and knowledge, both nationally and internationally. Schools are therefore very open and responsive to trends in the wider environment.

The effects of an aging society on this scenario are difficult to predict nor is it obvious what kind of social mechanisms would favour the emergence of this scenario. It might arise from a high degree of social stability which provides the necessary levels of trust and support. Or, it might be a response to disruptions that shatter the "old ways" of traditional school systems.

Scenario 2: Schools as focused learning organisations

In five dimensions

Attitudes, expectations, political support	■ Wide political and public agreement on goals and the value of public education as a "public good". ■ Generous funding and close attention to resource distribution fosters quality outcomes and equal learning opportunities. ■ Media supportive of schools, permitting freedom to innovate and individualise programmes.
Goals, functions, equity	■ Highly demanding curricula as the norm for all students, in a wide range of disciplines and specialisations. ■ Continuation of school diplomas as the major currency, alongside innovative assessment modalities. ■ Lifelong learning functions recognised; extensive guidance and counselling. ■ Elimination of low-quality programmes, plus focused efforts for low-income communities.
Organisations and structures	■ Schools with distinct profiles based on non-hierarchical, team-oriented organisations; and professional development. ■ Focus on new knowledge in teaching and learning; strong links with knowledge-based industries; investments in educational R&D. ■ Mixing students variously by age, grade, and ability; links among schools, tertiary education, enterprises (local, national, international). ■ ICT for communication and networking and as a tool for learning.
The geo-political dimension	■ Strong government frameworks and support, with focus on weakest communities. ■ Students and teachers use national and international networks to promote sharing and production of knowledge. ■ Countries with schools as learning organisations as the norm attract attention as world leaders in education.
The teaching force	■ Teaching corps with high status and working conditions under varied contractual arrangements. ■ Generous staffing promotes innovation in teaching and learning, professional development, and research. ■ Teaching moves away from being a lifetime career, with increasing mobility into and out of teaching. ■ Strong networking as the norm among teachers and with external sources of expertise.

Scenario 3: "Schools as Core Social Centres"

Schools could function as social centres in new community arrangements with learning at the core. These schools would have "low walls" and "open doors" and a very strong emphasis on collective and community tasks.

Characteristics

The central goal in this scenario is to increase community development and social integration. As a shared responsibility of the entire community, schooling draws on expertise, interest and experience from sources ranging from business to higher education, from religious groups to retired people.

Schooling takes place under different organisational forms, which go beyond formal schooling. ICTs are part of the structure and are used extensively for peer-to-peer and cross-border networking, as well as for interactions between students and teachers, and between schools and parents/communities. A high level of participation by all in society, of all ages, blurs the boundaries between schooling and other ways of learning.

This scenario is consistent with the *decentralisation trend*, giving more power to local communities. It makes use of *information age* technology, and turns the *aging of society* to advantage through inter-generational learning. It could also occur as a response to the lack of social *equality* and *changing family* structures, given its emphasis on socialisation.

Both the cognitive and non-cognitive are prominent, with the goal of building a strong foundation for lifelong learning. Learning is driven by committed professionals many of whom do not pursue a lifelong career in education.

The sector enjoys generous financial support in pursuit of high standards and quality learning environments in all communities, both rich and poor, and to make teaching attractive to all professionals.

Their contexts

Arguments in favour of this scenario are contradictory social conditions. It could arise in reaction to a loss of the social cohesion that traditionally comes through family, work, community, and church. Increasing strain on these structures could leave education as the primary source for fostering social capital. On the other hand, the wide-open school doors in this scenario may prove practicable only when there is ample family and community support.

Regardless of the cause, this scenario shows substantial blurring in the lines of demarcation between schooling and the broader environment. How far this goes depends on perceptions of stability, trust in public institutions, and belief in equity.

Local communities are empowered and governance is participatory, but this does not assume "small government" as this scenario might well depend on a flourishing public sector and regulation to reduce social inequity in education.

Scenario 3: Schools as core social centres

In five dimensions

Attitudes, expectations, political support	■ Wide political and public agreement on the goals and value of public education, generous funding. ■ High-trust politics: authorities, teachers, employers, and other community groups co-operate with schools. ■ Widespread recognition of schools as centres of community activity and solidarity. ■ Media support fosters freedom to develop pathways and partnerships.
Goals, functions, equity	■ Schools continue to transmit, legitimise, and accredit knowledge, but with intense focus on social and cultural outcomes. ■ Competence recognition also developed in the labour market, liberating schools from some credentialing pressures. ■ More non-formal arrangements and stronger recognition of lifelong learning. ■ Clear recognition of diversity and strong social cohesion goals.
Organisations and structures	■ Schooling in new organisational forms, less bureaucratic and more diverse. ■ General lowering of the "high walls" around schools increases student diversity, inter-generational mixing, and joint youth-adult activities. ■ Softening divisions between primary and secondary levels; re-emergence of all-age schools? ■ Strong ICT development with emphasis on networking among students, teachers, parents, community, and other stakeholders.
The geo-political dimension	■ Strong central frameworks, catering particularly to communities with weak social infrastructure. ■ But also a powerful local dimension, developing new forms of governance. ■ Technological progress and a narrowing of the "digital divide" create virtual communities and give students widespread contact with the global world.
The teaching force	■ A core of teaching professionals with high status, but not necessarily in lifetime careers, with a variety of contractual arrangements and conditions. ■ A prominent role for other professionals, community actors, parents in various learning contexts and settings. ■ Teaching profession often combined with other community tasks and responsibilities.

Scenario 4: "The Extended Market Model"

A highly developed learning market for young people could be the response by stakeholders dissatisfied with the range of choice offered by uniform public education. This is demand-driven, with new providers emerging but also obvious risks to social equity.

Characteristics

In this scenario, education takes on market characteristics and choice becomes prominent. This is triggered by dissatisfied "strategic consumers" and by government authorities who encourage diversification and a reduction of their own involvement in schooling.

Schools do not disappear but become just one component in the diversity of educational systems, alongside privatisation and public/private partnerships. The decline of government involvement may vary between the primary and secondary levels of education, and between affluent areas and those with limited resources.

The education market attracts new professionals with diverse public and private profiles. The business environment fosters innovation through diverse training and accreditation arrangements. The diversity of the market creates comparable diversity in teaching careers, including a growing international market for teachers.

Diversified services and private providers come to the forefront as systems disappear and governments see a markedly different role for themselves in setting rules for markets to operate. Schooling responds to the *knowledge economy*, in which *lifelong learning* is a prerequisite. Social *equality* is at issue especially where learners do not constitute an attractive market.

ICT, powerful and indispensable, supports a range of virtual programmes, some traditional educational tasks as well as skills and learning for specific interest groups. Students take advantage of the education offered through the large market of community-inspired, grass-roots organisations.

Their contexts

Market solutions may require relative affluence and equality, as governments and citizens may only accept a new government role in education when traditional demands have been met.

Or else it may be associated with income inequality and poverty, as the ability to purchase becomes paramount and the state withdraws from decision-making.

Reduced public-sector involvement in education does not necessarily mean small government – the market model could expand because of different not less government activity. It could decide to radically change funding structures, incentives and regulation, while setting the rules for the "learning market", overseeing quality assurance, and managing a potentially painful transition.

Scenario 4: The extended market model

In five dimensions

Attitudes, expectations, political support	■ Significant reduced belief in the value of public education and possible funding resistance by taxpayers. ■ Divergent and conflicting positions expressed by stakeholders; teachers' associations unable to resist greater privatisation. ■ Withdrawal of governments from their direct involvement in schooling, pushed by dissatisfaction of "strategic consumers". ■ The stability of new market solutions dependent on how well they meet perceived shortcomings.
Goals, functions, equity	■ Curriculum re-defined based on outcomes (compared with programmes and delivery), emphasis on values as well as cognitive outcomes. ■ New accreditation arrangements, and new information and guidance on educational choices – some organised publicly, much privately. ■ Lifelong learning becomes the norm for many, with diversified educational careers that go far beyond merely "staying in school". ■ Inequality tolerated; perhaps greater homogeneity of learner groups.
Organisations and structures	■ Flourishing of privatisation, public/private partnerships, individualisation, and home schooling. ■ More experimentation with organisational forms; new learning settings soften the boundaries between teacher and learner. ■ Primary and secondary levels diverge in development, with quicker recourse to market solutions for learners of secondary age. ■ All stakeholders see gains from imaginative use of ICT and flourishing of networks.
The geo-political dimension	■ Public authorities not active as education providers, but may remain responsible for assuring quality, providing incentives, and regulating the market. ■ Powerful international providers and accreditation agencies come into the market; as do players at local and national levels, many of them private. ■ Diverse stakeholders in educational governance, including community grass-roots organisations. ■ Funding arrangements, largely private, are crucial in shaping the new learning markets and ensuring quality.
The teaching force	■ The wide range of profiles and contractual arrangements in the new teaching force makes it a less distinct group. ■ Teaching professionals are plentiful in desirable residential areas and areas of market opportunity but shortages may appear in disadvantaged communities, compromising quality. ■ Rapid market adjustment is challenging, but flourishing accreditation arrangements pull new professionals into the learning market.

Scenario 5: "Learning in Networks"

Schooling takes a radical shift where conventional schools disappear, to be replaced by informal "learning networks". It would be part of a burgeoning "network society", with very different social arrangements in all spheres.

Characteristics

This radical, perhaps anarchic, scenario would see the replacement of school systems with universal networking instead. The abandonment of the schools might be driven by public dissatisfaction with available schools and the widespread access to powerful new learning media. As government involvement decreases, parents and students assume more responsibility for education.

Learner networks are an important part of the "network society", based on interaction and cooperation. The networks form around diverse parental, cultural, religious and community interests; some operate locally through home-schooling and small group interests, others through distance learning and international networking.

This scenario is a reflection of changing attitudes to public provision and organised services. It is a feature of the *information age* and new potentials in virtual and innovative learning. It mirrors the erosion of national borders in favour of the local and/or the international. The importance of ICT might mean that a *digital divide* increases the risks of *exclusion*.

Powerful, inexpensive ICT is critical for innovative learning options to emerge. Educational tools enable learners to undertake complex assignments, evaluate their own learning, and share resources. Networks form around learning communities, and socialisation and affective development are also taken care of this way.

As the teacher disappears with the demise of the classroom, new learning professionals emerge. So do the major media and ICT companies become active in mediating the learning networks.

Their contexts

The scenario assumes small government and the rejection of organised public institutions. It assumes that the networks based on diverse family, community and religious interests are strong enough, in breadth and depth, to form learning networks on a universal basis.

As a "universal" model, it would be most likely in affluent, high-skill, technology-intensive societies. However, powerful local networks could also be spontaneous reactions to chaotic social conditions and conflict.

Given the demise of institutionalised education, few boundaries would exist between initial education and lifelong learning. This scenario is consistent with a range of cultural and philosophical approaches, but it would be largely incompatible with strong elite cultures, partly because the education system loses its pre-eminent role in social selection.

While this scenario promotes diversity and democracy, it also runs risks of exclusion, especially for groups which have traditionally relied on the school as a vehicle for social inclusion.

Scenario 5: Learning in networks

In five dimensions

Attitudes, expectations, political support	■ Government less involved in educational governance, reduced public accountability. ■ Dissatisfaction with "school", its bureaucratic nature, and its perceived inability to deliver learning appropriate to complex, diverse societies. ■ Communities abandon schools, supported by political parties, the media, and multimedia companies in the learning industry. ■ New methods of private and community funding consistent with development of a "network society".
Goals, functions, equity	■ Traditional curriculum structures decline as school systems are dismantled; new values and attitudes are key. ■ The schools' demise also brings new arrangements for child and youth care, through *e.g.* sports, cultural activities, and community groups. ■ Emphasis on the use of ICT for information, guidance and marketing, and on new ways to certify competence. ■ Possibility for inequalities between those operating within the network society and those left outside.
Organisations and structures	■ Widespread use of informal educational settings such as small groups, home schooling, and individualised arrangements. ■ ICTs used extensively for learning and networking; the software market flourishes. ■ A few public schools may remain to serve those with no other access to network society. ■ If so, primary schools are more likely to survive (basic knowledge and socialisation) than secondary schools.
The geo-political dimension	■ Educational networks are based on diverse interests: parental, cultural, religious, community – some local, some national, some cross-border. ■ Local and international dimensions strengthened at the expense of the national; new forms of international accreditation emerge for elites. ■ The role of education authorities shifts toward bridging the "digital divide" and regulating education markets. ■ Community players and aggressive media companies help drive the dismantling of national school systems.
The teaching force	■ Most classrooms disappear, replaced by diverse community-based settings and experiential learning. ■ Blurring and disappearance of the boundaries between teacher and student, parent and teacher, education and community. ■ Learning networks bring together new clusters of learners and interests. ■ The profession of "teacher" disappears, but new "learning professionals" may emerge to support informal networks.

Scenario 6: "System Meltdown"

Fragile school systems could break down under a major crisis of teacher shortage. Such a "meltdown" could lead to a vicious circle of school decline or it could be a kick-start toward radical change.

Characteristics

This future is constructed around one main parameter – teachers – in elaboration of a "worst case" scenario – a crisis triggered by longstanding and worsening teacher shortages causing the school system to break down.

The crisis results from an outflow of teachers, leaving early on, mid-career or through retirement, that far outstrips the inflow of new recruits in a tight market for skilled labour. The crisis is recognised too late. The policy measures that might rectify it take too long to show results. Social inequalities are exacerbated by the disparities in the depth of the crisis especially between different socio-geographic areas.

Meltdown is triggered by a combination of factors – declining belief in the education system, the *aging society* meaning aging teachers, and a buoyant job market offering attractive jobs to would-be teachers. The *information age*, with self-study ICT solutions, might help to counterbalance the chronic teacher shortage.

Reactions to "system meltdown" could vary. There could be a downward spiral of conflict and retrenchment, with further declining quality or interruption of educational delivery. Or it might spark emergency strategies with stakeholders joining forces to build a new system.

In all cases, ICT plays an increasingly important role by performing some functions traditionally provided by teachers, *e.g.* virtual-reality devices, distance learning modalities, on-line evaluation systems, and interactive television.

Their contexts

"System meltdown" is more likely in affluent, high-skill societies, where teachers have more attractive job alternatives. In poorer societies, the teaching profession will remain relatively attractive and high-status.

On the other hand, system meltdown in rich societies could attract an influx of trained teachers from poorer countries, with damaging consequences for them with their limited resources for retaining or replacing qualified much-needed teachers.

Educational meltdown could be associated with catastrophes such as wartime destruction or drastic epidemics. Or it could happen in calm conditions through the combination of causes and the lack of anticipation regarding problems in the teaching profession.

Scenario 6: System meltdown

In five dimensions

Attitudes, expectations, political support	■ Intense public and media dissatisfaction with education in a vicious circle of declining standards and a crisis in teacher recruitment. ■ The scale and long-term nature of the teacher recruitment crisis overwhelm possible policy solutions. ■ Policy initiatives and measures to rectify the situation are either too late or take too long to show results. ■ The crisis either increases political conflict over education, or leads to a consensus on emergency strategies.
Goals, functions, equity	■ Established curricular structures are under intense pressure, especially in subjects where qualified teachers are in short supply. ■ The shortage might stimulate positive change – reviews of curricula, a shift from supply- to demand-oriented education. ■ It might lead to strengthening testing, examinations and accountability mechanisms in reaction to sliding standards. ■ Inequalities widen between groups divided by residential location as well as social and cultural affiliation; affluent families desert public schools.
Organisations and structures	■ Public pressure in response to declining standards and large classes drives some schools back to highly traditional methods. ■ Others respond with innovations utilising expertise from sources such as tertiary education, enterprises, and communities. ■ Emergence of diverse mix of learning settings: lectures, student groupings, home learning. ■ ICT used to replace teachers, with technology and media companies active.
The geo-political dimension	■ The crisis initially strengthens the powers of central authorities but their position weakens in proportion to the duration of crisis. ■ Communities that are not in crisis seek to protect themselves by increasing their autonomy. ■ Corporate and media interests in the learning market intensify, offering new alternatives. ■ International initiatives to "lend" and "borrow" trained teachers between countries multiply, including between North and South.
The teaching force	■ Initiatives seek to bring retired teachers back to the schools; teaching posts are created for semi-professionals, possibly compromising quality. ■ Teaching conditions worsen as the ratio of teachers to students falls, with acute problems in the worst-affected areas. ■ Rewards increase for teachers; the home-tutoring market flourishes. ■ The role of unions/associations increases in face of their relative scarcity but weakens as the profession goes into decline.

PART IV

How to go about it?

Some tools to shape the future

The influence we have on the future makes it worth investing time in exploring in a systemic manner what we truly want and what is possible.

It is hard, if not impossible to determine what factors have caused the current state of affairs. Likewise, a complex interplay of social, cultural, political, scientific, technological and natural factors shapes our future.

Our choices, however, can also influence events and processes that may change the future. This potential influence on the future makes it worth investing time to explore in a systemic manner where we are heading to and in which direction we would like to evolve. For schooling, this means asking ourselves: What kind of educational system is evolving? Is this what we want for future generations? Or should we adjust the current path of development towards something more desirable?

A range of future-oriented methodologies help us to see more clearly what the future may bring and explore options for shaping the future, in terms of what we want and what is possible.

This Part explains how the *Schooling for Tomorrow* scenarios and Trends Tool can be used and what it takes to do so (Sheets IV.2-3). It then gives a brief overview of typical steps in the scenario development process (Sheet IV.4) and lastly it provides some short snapshots of other future-oriented methodologies that can either stand alone or be used in combination with scenario development (Sheet IV.5).

Part IV: How to go about it?

Some tools to shape the future

Using the *Schooling for Tomorrow* scenarios

The *Schooling for Tomorrow* scenarios are above all *tools*: tools for reflection, tools for collaboration, tools for innovation and transformation. This is the source of their power for building capacity and leadership. Scenario development enables policy-makers and school leaders to think ahead, beyond the straitjackets of everyday tasks, about the forefront of their fields.

Why use them?

While a scenario cannot put the "right answer" or ideal solutions on the table, it can help policy-makers and school leaders in many ways:

Bring together a wide cross-section of stakeholders

It is often hard to get stakeholders together, especially if they come from various sectors, have different interest and when the objective lies beyond immediate concerns. Scenario development offers a means to establish dialogue and a structure for substantive debate. It can also help provide a neutral space where parties with opposing views can find a shared vision of the future.

Explore options and advance strategic choices

"It is better to heal than to cure". It is better to anticipate change than merely respond to it. Scenario development can help people to anticipate threats, grasp opportunities, see choices, spot the unexpected and evaluate potential actions. By sharpening the awareness of long-term alternatives, scenarios help people to make better decisions today.

Widen the intellectual horizon

An important added value of scenario development lies in its participatory methods, which help people go beyond traditional boundaries of their dialogues and thinking. Participants are challenged to imagine themselves in another place (the future) and to "step into others people's shoes". Most importantly, scenario development helps participants challenge "group think" and examine the values and assumptions that one takes for granted.

> **"The real voyage of discovery consists not in seeking new landscapes but in having new eyes."**
>
> *Marcel Proust*

What it takes

Involving people with both a marginal and central stake in the issue to be examined is a criterion for success.

To ensure that the use of scenarios is fruitful it is of key importance for stakeholders to participate in their creation. Although interesting scenarios may be developed by individuals or small groups, their effectiveness as instruments for change is restricted.

Any societal transformation involves and affects a wide range of actors and interests. Sometimes even a single actor can block a transformation process. Involving those with even marginal stakes in the issue at hand will greatly increase the chances of success.

People with experience

First and foremost, scenario development requires input from those with direct classroom experience: teachers and school leaders. These practitioners know how policies translate into practice. They are the ones who deliver the valuable thinking behind the scenarios with up-to-date knowledge of how schooling and learning takes place. The process at hand will determine which social contexts and environments the practitioners should be drawn from.

People with knowledge

For scenarios to be credible, they must be built on reliable sources and knowledge about trends both in the education sector and in society at large. If the team lacks this expertise, it should be brought in from outside at appropriate stages in the process. This input is crucial when choosing the focus of the scenario, building it and testing it. Contributions from outside are also useful to "give new blood" to a process and moderate the tendency to confirm "group thinking".

People with influence

It would be ideal to have key decision-makers involved in the whole process, especially if the issues affect policy, but unfortunately they typically cannot spare enough time for full involvement. As they are crucial for the project's long-term impact, it is well worth investing time and energy to prepare and digest messages that should get across to the decision-makers.

People with added value

While knowledge, experience and influence pertaining to the subject are essential, a successful team also needs certain general skills. For example, effective facilitators are crucial for bridging gaps between groups, encouraging creativity and teamwork as well as creating a positive atmosphere. Strategic thinkers are needed to keep the team on track when it strays. Good communication and writing skills are required to get the team's ideas out to a wider audience.

Convincing people of the potential benefits of *futures thinking* sometimes takes time, but it is time well spent. Likewise, a deep understanding of the stakeholders' needs is the key to helping them see how the process can help and, even more importantly, for making sure that it carries fruit.

Using the *Schooling for Tomorrow* Trends Tool

The *Schooling for Tomorrow* "Trends Tool" is an inspiration to building the scenarios on trends that occur in education and its wider environment. It is a kick-starter for helping scenario processes explore the trends relating to its specific subject and its local and wider environment. Building scenarios upon carefully identified trends improves the robustness and realism of scenarios.

Why use trends?

However open-minded we may regard ourselves, we all have ideas about what the future might be like, often based on our prejudices and preferences.

U.K. Report 2005

A successful *futures thinking* initiative will not merely be a comfortable ride in a familiar neighbourhood; it will bring the participants into unexpected realms of the possible future. To achieve this requires thorough analysis of trends in education, the local environment and the outer world.

Trends analysis is the key to creating powerful, robust scenario content. In addition, trends analysis also helps erasing prejudices and opening minds of participants by identifying the interrelatedness between developments that they are aware of, but not necessarily relate to the subject matter.

Basing scenario content on trends analysis ensures that they are:

Plausible	Logical, consistent and believable
Relevant	Highlighting key challenges and dynamics of the future
Divergent	Different from each other in strategically significant ways
And challenging	Questioning fundamental beliefs and assumptions

To qualify as a trend, a phenomenon must show a continuous direction of development for a significant period. Other developments are fluctuations that may have little long-term impact. Trends are also characterised as moving in a direction such as *more, the same,* or *less*, though possibly varying in certainty and consistency.

What it takes

The trends and drivers that directly and indirectly influence the scenario's subject are identified by collecting and analysing data, including consultation with relevant stakeholders. Various methods are used for the analysis, each one with its own advantages for developing perspectives and insights that will inform the scenarios.

Methods to gain new perspectives and insights

Desk research is relevant and feasible in most cases, since on any given subject there will be a range of information available. Desk research helps to map out the bigger picture behind the issues to be examined. It involves a wide variety of sources, such as the Internet, government ministries and agencies, non-governmental organisations, international organisations and companies, research communities and on-line and off-line journals. "Horizon Scanning" can emerge from a desk research and be enriched through small group discussions of experts (Sheet IV.5). This is a more or less systemic examination of potential threats, opportunities and likely future developments regarding the subject matter.

Extrapolation from historical trends involves assessing potential developments for the future by building on historical data and information. Trends are, however, rarely unambiguous, as they react to new events and other trends. The environment in which a trend will further develop is always different from that of its past. Therefore a straightforward projection of a trend into the future is unlikely to be reliable. The interdependence of trends and new future events can be taken into account by using methods such as "Trend Impact Analysis" (Sheet IV.5).

Consultation with experts in various fields provides new perspectives and insights. Experts can be involved through in-depth interviews, telephone interviews and focus group discussions. One future-oriented methodology, the "Delphi analysis", specifically supports structured brainstorming with experts (Sheet IV.5).

Engaging participants in the trends

While the data analysis is typically done by a small team, the main group participating in scenario creation (Sheet IV.4) should have a chance to familiarise themselves with the consolidated analysis and provide feedback on the identified trends through a general discussion. This will complement the analysis by filling in gaps, describing how the stakeholders themselves experience and perceive the trends and showing how the trends are manifested in schools.

Basic considerations for scenario development

The goal in using scenarios is to reveal the dynamics of change and to use these insights for the broader objectives of the *futures thinking* initiative. These broader objectives should drive all decisions about process design, methods and tools in the stages of scenario development. Important choices must be made at the outset to serve the ultimate purpose.

Defining the basics

The scope and design of a scenario development process must be guided by four overall considerations:

- The goal of the scenario analysis
- The working capacity and culture of the participants
- Available resources
- The context in which the scenarios will be used

The design may favour either "divergent" or "convergent thinking". *Divergent thinking* is the intuitive approach that involves a creative elaboration of ideas. *Convergent thinking*, on the other hand, is the goal-oriented, analytical, observational and deductive process. The goal of the design is to combine creativity with rigour. The balance of divergent and convergent thinking will depend, in part, on the following choices:

- Quantitative (figures, data, statistics, etc.) *versus* qualitative information (reports, interviews, discussions etc.).
- Inclusive approach (participatory methods) *versus* exclusive approach (work by individuals or small groups).

Scenario analysis can range from very *simple* to quite *complex*. Scenarios for exploring a given subject tend to be relatively simple and intuitive compared to scenarios for pre-policy research, which are usually less intuitive and more complex.

A well-designed future study carefully balances *convergent thinking* with *divergent thinking* so that the process is explorative and creative, yet rooted in facts and explicitly stated rational assumptions.

Making the scenario process fit the purpose

The purposes of scenarios range from "exploration" at one end of the scale to "support for decision-making" at the other. The position of the different uses on this scale should be reflected in the design, methods and tools used in all stages of the scenario process.

1 Developing a shared knowledge of the environment

The exploratory elements of scenario development are extremely valuable in policy and administration. They address the deeply rooted, culturally-based assumptions that often exist regarding the world and how it works. Working with scenarios in relation to a particular subject may help the participants to challenge and re-conceptualise their understanding of the issues at hand and the dynamics and trends that drive their development.

The major goal of the scenario in such a context may "simply" be to challenge existing understandings of the dynamics within one environment and in relation to one subject. A relatively quick and undemanding design may suffice, as the main objective is to understand the driving forces and not necessarily to carry the process forward to problem-solving.

2 Strengthening a public discourse

The goal of a scenario development process may be to establish public discourse on a range of subjects and to involve as many stakeholders as possible. In this case, framing the issues in multiple scenarios could provide valuable tools to support the public discourse.

In this context, it may be favourable to include stakeholders at an early phase of the scenario process, as it would encourage them to take ownership of the process and disseminate the results at a very early stage. This situation requires a robust and resource-intensive process design, since many information sources and stakeholders are involved. Scenarios require greater consistency and precision when used to support public discussion or as components in larger communication strategies.

3 Supporting decision-making processes

Scenarios are also used to support decision-making on complex issues with long-term implications. This requires very well-researched, robust scenarios with large amounts of quantified data. Interviews with key personnel and focus groups should be devoted to broadening the understanding of the subject and the possible trade-offs that various choices may entail. As strategic decisions will be taken on the basis of the scenarios, the group must be absolutely clear about both the level of uncertainty in the driving trends and dynamics and how they may be influenced.

Other future-oriented methodologies

The *Schooling for Tomorrow* approach is one of several possible approaches to futures work. Other future-oriented methodologies and techniques can be used individually or in combination with others, including as part of a scenario development process. Here is a selection of a few major methodologies which can contribute to a systematic examination of the future.

The Delphi method

The Delphi method is an exploration technique that facilitates the collection of information and knowledge from a group of experts on a specific issue.

It follows a structured and iterative process, in which a series of questionnaires is sent (or handed) to selected experts. Each round of questionnaires includes all of the participants' earlier responses, presented anonymously and the participants can modify and adapt their own statements as they see fit. This usually leads to a consensus forecast on future trends, with multiple expert opinions converging to a single position.

The interactions among participants are controlled by a monitor who filters and analyses the questionnaires. Each round of questionnaires is prepared based on the analysis of the responses to the prior one.

The Delphi method is suitable for scenario development because it feeds the process with the perspective of one group of stakeholders, thereby enriching the multi-disciplinary exercise of identifying trends.

Horizon scanning

Horizon scanning is about finding early signs of potentially important developments through a systematic examination of potential threats and opportunities, with emphasis on new technology and its effects on the issue at hand.

The method calls for determining what is constant, what changes and what constantly changes. It explores novel and unexpected issues as well as persistent problems or trends, including matters at the margins of current thinking that challenge past assumptions.

Horizon scanning is often based on a desk research – comprising database and hard-copy literature reviews, as well as Internet searches. It can also be undertaken by small groups of experts who are at the forefront in the area of concern: they share their perspectives and knowledge with each other so as to "scan" how new phenomena might influence the future.

A solid "scan of the horizon" can provide the background to develop strategies for anticipating future developments and thereby gain lead-time. It can also be a way to assess trends to feed into a scenario development process.

Trend impact analysis

Trend impact analysis is a simple forecasting approach that extrapolates historical data into the future, while taking into account unprecedented future events.

This method permits an analyst to include and systematically examine the effects of possible future events that are expected to affect the trend that is extrapolated. The events can include technological, political, social, economic and value-oriented changes.

The point of departure is the "surprise-free" projection based on historical data, assuming an absence of unprecedented future events. Expert opinions are then used to identify future events that might cause deviations from the surprise-free projection and calibrate their likelihood and potential strength. A "high-impact" event would strongly affect the trend, positively or negatively, compared to the surprise-free projection.

By combining surprise-free extrapolations with judgments about the probabilities and impacts of selected future events, trend impact analysis provides a solid basis for building scenarios.

Overview

This general division of futures work into boxes can be misleading because future-oriented methodologies are often adaptable to specific purposes and can combine several aspects at the same time. Nevertheless, it is possible to specify the dominant characteristics of each methodology.

Futurists distinguish normative forecasting from exploratory forecasting. Normative work is based on norms or values. Hence, normative forecasting addresses the question: what future do we want? Exploratory forecasting explores what is possible regardless of what is desirable.

Qualitative and quantitative methods can clearly be distinguished, but also combined and help orient the scenario approach towards convergent and divergent thinking (Sheet IV.4). The table below informs also whether the methodologies are appropriate for stimulating stakeholder engagements, testing robustness of trends and drivers and spotting the unexpected.

	Evidence based	Quantitative	Qualitative	Normative	Exploratory	Stakeholder engagement	Testing robustness	Spotting unexpected
Scenario method	X	X	X	X	X	X	X	X
Delphi method	X		X	X	X	X		X
Horizon scanning	X	X			X			X
Trend impact	X	X	X		X			

Sources: Foresight Toolkit U.K. and The AC/UNU Millennium Project

PART V

Futures thinking in action

Some practices and lessons learnt

People we've worked with are starting to think outside the box they traditionally think in, extending their own networks and working alongside others to think about how to get the best for students.

New Zealand, November 2004

Schooling for Tomorrow has in recent years been applying *futures thinking in action* in collaboration with different country-based initiatives: during Phase Two in one each in the U.K., the Netherlands and New Zealand and two in Canada. These countries have developed and applied *futures thinking* to address challenges arising in their own systems and have thereby in fresh ways injected long-term thinking into their educational agendas. Although not formally part of Phase Two of *Schooling for Tomorrow*, Victoria (Australia) has also set up a valuable project that is presented in this chapter.

Their experiences suggest the diversity of contexts where *futures thinking* can be successfully applied, ranging from engaging a wide range of stakeholders to reflect on long-term education futures, to targeted capacity-building for school heads. The experiences also testify to the flexibility of the *Schooling for Tomorrow* tools and resources, which were adapted to the needs and purposes of each initiative.

While there is no single best way to engage in *futures thinking,* the country-based initiatives share certain characteristics concerning challenges, processes and benefits. These elements provide a practical angle on implementing *futures thinking.* The lessons learned will be of interest for those joining the *Schooling for Tomorrow* Project and for those considering the relevance of futures studies to develop their educational systems.

This Part presents the experiences of five country-based initiatives and explains, in a thematic format, why the countries made the choices they did. It begins with an overview of the *futures thinking* initiatives (Sheet V.2), followed by: explanations of how the initiatives got started (Sheet V.3), what the processes were (Sheet V.4), what benefits were gained (Sheet V.5). The section ends with the essential lessons learnt from the processes (Sheet V. 6).

Part V: Futures thinking in action

Some practices and lessons learnt

The outset

The six initiatives have developed interesting projects by combining their own agendas with the *Schooling for Tomorrow* Project and have thereby produced valuable insights for the international project. *Futures thinking* is a broad concept and the very diverse projects do not easily combine into a systematic pattern. They are different not just in context and content, but also in the variation of participants and intended audiences.

Shared characteristics

All five initiatives share key characteristics; the *Schooling for Tomorrow* criteria for *educational futures thinking in action* are:

Educational	Each initiative had the aim of informing decision-making in learning and education, either inside or outside the formal school system. The initiatives included participation of authorities, practitioners, as well as persons formally outside education, but with a direct interest in it.
Futures thinking	Each initiative adopted a deliberate futures-oriented methodology as an essential aspect of reaching its goals. The timescale for all the projects were medium to long-term, incorporating time-horizons of at least a 10-15 year time horizon or further into the future.
In action	Each initiative was part of a political agenda or broader development framework of action, rather than being an academic exercise of researchers. The initiatives built strategic capacity or futures-oriented dialogue with a focus on sustainability.

Each project began with the six *Schooling for Tomorrow* scenarios, using them to various degrees and adapting them to specific, local needs and contexts.

Diversity

The following provides an overview of the context, challenges and goals of each country-based initiative.

The U.K *"FutureSight"*	As the devolved national education system moves away from "one-size-fits-all" solutions, school leadership becomes crucially important. *FutureSight* was launched to address the issue of leadership in schools, from "leading edge" schools to those with serious challenges. The goal was to develop practical applications of *futures thinking* which school leaders could use to help them shape, not just guess at, the future and thereby help them act as key agents of change.
New Zealand *"Secondary Futures"*	The "Secondary Futures" project was launched in 2002 to generate system-wide structured dialogue among the Ministry of Education, the schooling sector and communities, on the purpose and direction of secondary schooling and how it will be in 20 years. At the same time, there was a general desire to initiate a professional debate around the issues of quality teaching, student outcomes and diversity.
The Netherlands *"Building School Leadership"*	Decentralisation is a key feature of national policy for primary and secondary education, giving more autonomy to schools and more influence to parents, students and the local community. It also creates a need for long-term thinking and leadership at the local levels. "Building School Leadership" is a bottom-up approach introducing *futures thinking* in the initial training of leaders in primary education, based on the principle that the schools themselves should shape innovation.
Ontario, Canada *"Vision 2020"* *&* *"Teaching as a Profession"*	The province of Ontario, whose educational system is divided between French- and English-language schools, launched two initiatives: In the context of the francophone community's concerns about linguistic and cultural assimilation, and three years after the establishment of French-language school boards, "Vision 2020" was started in 2002 as a means to foster dialogue among education partners and the community and to develop a shared vision of the future of French language education in a minority setting. "Teaching as a Profession" was launched to determine the appropriate roles of teachers and teaching in a changing society, with advances in information technology, shifting job markets and socioeconomic disparities. It began after a period when consensus had been difficult and a central goal therefore was to overcome the barriers to dialogue.
Victoria *"Focus on the Future"*	The Department of Education & Training of the State of Victoria initiated a programme to engage education leaders in conversations about global and local trends and their preferred futures for schooling. The programme utilises trends and scenarios thinking together with materials based on "FutureSight" (developed in the UK) to assist different levels of the State's education system (schools, regions, central government) to build preferred futures and to inform further development of the State's reform agenda initiatives.

Getting started

A prerequisite for successful *futures thinking* is that the context and framework within which it takes place provide enough freedom for innovative processes to unfold. Success depends also on the scope and nature of participation and in how participants are put into situations that demand their respective contributions and interaction.

Participation – From top-down to bottom-up

If you could speak to an Oracle about 2020, what would you ask?

FutureSight Toolkit U.K. Report 2005

Policy for change cannot be successfully imposed top-down. If an initiative is to go beyond the conventional wisdom about the future, it must be inclusive, involving both educators within the system and active members of civil society and the broader environment.

While the *Schooling for Tomorrow* initiatives began as primarily top-down efforts, as they progressed they gained increasing participation from broad cross-sections of stakeholders, with a mix of interests and professional backgrounds.

The core

All of the projects were initiated by ministries of education and associated institutions, always in partnership with other levels of the education system. In the U.K., the core participants were school heads from a range of socio-economic environments. The New Zealand team's "*touchstone group*" of NGOs functioned as a conduit to key organisations in the education sector.

The external

Futures thinking involves creativity, this can be brought into the process through external facilitators, experts and role-playing. For example, the New Zealand group appointed "*guardians*", four independent, respected figures in their fields, whose role was to protect the integrity of the process, create a space for dialogue and instil confidence. Their participation greatly enhanced the project's engagement with civil society and the business community.

The unusual

Including stakeholders who are not usually consulted in policy processes, but who are directly affected by their implementation, ensures greater relevance and credibility of the initiative's results. Thus, students and the "new generation" of parents, teachers and school principals were core participants in the Canadian initiative to develop a shared vision for French-language schools. Similarly, the British initiative included students from years 9 and 12, to get their views on how to redesign learning and the New Zealand initiative sought participants among ethnic groups and people with low literacy skills.

Widening dimensions

Most of the initiatives began with small-scale work to study, adapt and develop the tools and then expanded into inclusive, larger-scale processes. In general, the breadth of participation increased greatly as the initiatives progressed. International exchange of experiences in futures work also helped widen the dimensions and enrich individual initiatives. A very impressive case of widening participation was Victoria, where 40 principles were trained to deliver workshops, in which then 196 schools (13% of the total) participated.

Settings and modalities

In the *Schooling for Tomorrow* initiatives, two principles stand out for getting started: the need to nurture the participants' curiosity and commitment and the need to integrate quality assurance for the further process. The approaches and working modalities varied considerably, depending on the objectives. Here are some examples of how the initiatives began.

Ensuring quality

The Canadian initiative *Teaching as a Profession* began with a core study group with backgrounds as far apart as education, law and politics. This group prepared the substantive groundwork for dialogue. To ensure quality in applying the new methods, the core group was supported by a research team with experience in futures scenarios. Later, the project presented workshops, some targeted to specific interest groups and some to a mix of organisations and sectors.

Adapting tools

In the U.K., the *FutureSight* process began with a large seminar on leadership in schools, bringing together head teachers, school heads and senior officials from national training and development organisations. Afterwards, a smaller group of school leaders developed a conceptual framework for applying the *futures thinking* approach to leadership in redesigning schooling. This resulted in a toolkit that was tested and disseminated widely by school groups and local authorities. Developing tools is one possibility, using existing materials and adapting them another. Victoria scanned existing models and chose the "FutureSight" material as most appropriate for its own project. It then adapted the material to suit its own needs.

Collecting data

The *Secondary Futures* project in New Zealand began with a questionnaire whereby hundreds of stakeholders helped define the key features of New Zealanders' vision for secondary education. The responses were used to develop a matrix of specific topics, focusing further dialogue on themes such as "students first", "inspiring teacher", "social effects", "community connectedness", and "the place of technology".

Understanding the context

In the pilot stage of Canada's *Teaching as a Profession* initiative, case studies from the past proved instrumental in stimulating dialogue about the future. The participants reported that three case studies, which were commissioned on the social, economic and political circumstances of school-related policies, gave them a better understanding of the contexts of decision-making, which helped them address future policies more realistically. The work on futures connected thus back to the present, providing insight to current policy discussions.

The process

Scenario development in all of the country-based initiatives involved participatory methods for incorporating the existing *Schooling for Tomorrow* scenarios, modifying them, or using them as models for new ones. The key was to adapt the tools to local contexts and thus add value to the *futures thinking* processes. If the participants sense a return of added value, then there is a much better chance of positive outcomes and long-term benefits.

How the scenarios were used

Once participants understood the *Schooling for Tomorrow* scenarios, they could apply them to their contexts of interest. Here are some examples of how they proceeded.

Transforming the scenarios

The *FutureSight* project in the U.K. developed the six scenarios into a toolkit for facilitating participation in workshops, through (among other things) game boards. The *Teaching as a Profession* project in Canada, seeking to promote free discussion of teachers' roles in the future, eliminated the suggested roles that were in the original scenarios. The project in the Netherlands chose to use the Canadian scenarios and adapted them to the European and national context.

Inventing new scenarios

The Vision 2020 project in Canada used the scenarios to free participants from pressing concerns which might have prevented them from seeing preferable futures. They began by gaining familiarity with the futures approach, considered how French-language education would be affected in each scenario and the values that each scenario reflected. Finally, a seventh scenario for the French-language school of the future was developed, based on the group's individual and shared values.

Simplifying the scenarios

The *Secondary Futures* project in New Zealand adapted the *Schooling for Tomorrow* scenarios to make them easily understood by the various audiences who would be involved in workshops. While remaining faithful to the originals, the "indigenous" scenarios related more directly to the participants' lives and concerns.

Eliminating scenarios

The projects in New Zealand, Canada and the Netherlands eliminated specific scenarios that were considered counterproductive. Some seemed too futuristic to be relevant, while others were so relevant to the present situation that they interfered with the goal of setting free the participants' imaginations. In Victoria the six scenarios were condensed in three that were relevant to the Victorian context.

Participants embark on a voyage of exploration into unknown areas and beyond. Like Alice in Wonderland when she falls down the rabbit hole, you soon realise that conventional wisdom and solutions are not going to be of much help on this journey.

Hanne Shapiro in *Think Scenarios, Rethink Education*

Some techniques

> **"Without this sort of thinking we might have got bogged down by existing realities and could well ended up simply redesigning a school which was created 30 or 40 years ago."**
> *U.K report 2005*

Scenario development can be used alone or in combination with other *futures thinking* methods (Sheet IV.5). In determining whether the process produces a good outcome, however, the most important factor is the "chemistry" within the group. Fortunately, "good chemistry" can come into play by nurturing the process with simple techniques that stimulate interaction and help people bring an open mind to the project. It is crucial, especially when scenario development involves many stakeholders with different professional and social backgrounds, to find ways to ease tension and ensure constructive collaboration. Here are some examples of the creative and participatory approaches used in the *Schooling for Tomorrow* initiatives.

Questioning values and assumptions

A prerequisite for effective scenario development is the capacity to examine values and identify the assumptions behind them, especially one's own values. The New Zealand project used a "preference matrix" to help the participants identify a hierarchy of desirable features in schooling options. This helped them dig deeply into the reasons underlying the preferences. Participants in the *Teaching as a Profession* project in Canada voted on each scenario's ability to help them question values and assumptions. Votes were conducted before and after discussing the likely and desirable scenarios. After voting, the participants showed much more confidence in the scenarios as tools for challenging entrenched ideas and thus facilitating further discussions.

Thinking "outside the box"

Theatre techniques are useful in framing *futures thinking* processes and helping people drop their traditional roles. In the U.K., *FutureSight* used the technique of "hot seating": participants in small groups assumed roles such as student, parent, or professional. After first imagining a scenario and the experience of the character within it, the role player responded in character to questions from the wider group. In New Zealand, *Secondary Futures* also used role-playing: "walking in the shoes" of fictional New Zealanders gave the participants a deeper understanding of how and why one's view of a scenario may differ depending on one's social position.

Imagining the future

The New Zealand project also created a series of "time-shift cards", visual materials comparing today with the situation 20 years ago in social, technological, economic, environmental and political terms. This helped participants think how a current trend might evolve in the coming 20 years. As a visual resource, the cards served the project's mandate to bring a range of voices, including youth, ethnic groups and people with low levels of literacy, into the debate over education policy.

Speaking the same language

FutureSight participants in the U.K. developed a specialised vocabulary to talk about the future. "Speaking the same language" greatly clarified communication when working on the scenarios and promoted understanding of the relationship between the current reality and the worlds within the scenario.

Benefits

The participants and country project teams already report many benefits from the *Schooling for Tomorrow* initiatives. Although not all of the projects are completed and evaluated and their effects must ultimately be measured over longer time spans, feedback from the participants and project teams provides positive indications as to the momentum and direction of the initiatives.

Learning processes

Futures thinking is a multi-actor learning and visualisation process. It is wide-ranging in scope and including building futures literacy; expanding exploration of the wider environment of schooling; expressing personal values and opinions as well as developing open-mindedness to the values and opinions of others.

> **"It has helped me think more broadly and at the possibility of a number of solutions, whereas in the past it has been easier to look along a single tried and trusted line."**
>
> *U.K. report 2005*

Awareness of the wider environment

Scenario work benefits participants by increasing their awareness of identity issues, environmental matters and technological advancements. The work encourages new perspectives on such critical topics as the shifting nature of childhood and adolescence, the development of the knowledge society, the persistent problems of social inequality and exclusion and the shifting nature of family and community life.

Communication and reflection

Exploration of scenarios builds skills in communication and reflection. Activities such as "hot-seating" and role-playing enable participants to "think outside the box", to go beyond the boundaries of the present and explore wider possibilities in the medium and long term. After participating in scenario activities, many people reported improved abilities to identify and articulate their own values and to understand and thus respect those of others.

Visionary capacity

Scenario work is used as a vehicle for leadership learning in both the Netherlands and in the U.K. It helps build the visionary capacity of school leaders and education authorities so that they can act as agents of change at local levels in the context of system-wide change and make strategic choices that bring them closer to a preferred future. The *FutureSight* project, for example, has reached 700 stakeholders in the U.K., and trained many workshop facilitators. Its toolkit is available online, while schools, networks and partners have bought more than 1 000 copies.

Knowledge building

The matrix developed for *futures thinking* in New Zealand provides structure for ongoing conversations, investigations and analysis. It serves as a "virtual filing cabinet" for the multi-layered data gathered during *Secondary Futures* events, a reservoir of material to simulate continued rethinking and learning over the project's remaining two years.

Policy implications

Scenario work leads to more intentional and more fundamental discussions on education reform. It opens new avenues, helping decision-makers not to choose pre-existing solutions simply from habit. The work has built capacity for stakeholders who work closely with students to engage more effectively with policy initiatives, especially by improving awareness of the long-term implications of policy decision

Policy debate on new terms

In the U.K., participants reported that they were engaged and motivated by the *FutureSight* toolkit materials and that working without a predetermined end point was a new experience. They indicated that if they had been offered final policy choices before the scenario work, they would have given "pre-programmed" responses based on past experience. The open-ended process, the confrontations, the trade-offs and conflicts among various trends and scenarios – all of these experiences gave the participants ideas on how to address difficult choices in their own school-development processes and new terms for discussions with policy-makers.

Legitimacy for innovation

The concerns of groups outside government were crucial in all of these futures processes. In New Zealand, for example, a previous wave of public sector reform had left education trade unions deeply suspicious of new reform efforts. The participatory and inclusive approach of *futures thinking* helped legitimise the process and establish an environment conducive to positive change. So far 900 participants have participated in *Secondary Futures* workshops and the project is engaging with hundreds more.

Common ground

Scenario work can help establish a shared vision for development. Canada's Vision 2020 team, for example, is producing a facilitation kit that helps education partners and community groups organise Vision 2020 *futures thinking* workshops with their communities and with other partners in order to apply the ideas in their decision-making and work towards a shared vision of French-language schooling.

Actual change

Futures thinking can be the start of a change process. The Victorian project combined two streams. A first more general stream was aimed at exposing as many schools as possible to *futures thinking*. The second stream involved a small number of accredited schools that were part of an initiative to develop a "Performance and Evaluation Culture". These schools were offered two additional modules (on top of the regular four) in which they were required to consult the school and the community before the workshop. The workshop aimed at translating this material (together with the previous *futures thinking*) into strategies for actual change. This is followed by another workshop that gives participants further tools and strategies to move their school towards a preferred future.

Lessons learnt

The following compiles a set of recommendations based on the lessons learnt through the country-based *Schooling for Tomorrow* initiatives. Note that these lessons are by no means exhaustive.

The outset

- Ensure that *futures thinking* adds value to the context in which it is applied and its framework gives sufficient freedom for innovative processes to unfold.
- Be clear about the objectives and ensure that the scenario method is chosen as a tool to achieve them and not as an end in itself.
- Ensure a time horizon of the futures work of at least 10-15 years and if possibly longer into the future. This does not prevent the initiative from connecting back to the present.
- Ensure that the initiative has a formal connection to strategic planning processes so that there is potential for scaling up outcomes.
- Ensure that the futures work is protected from everyday concerns and immediate political, financial or social controversies.
- Ensure that the initiative is not limited to reflecting on the future, but also includes conceptualising how to change current systems in specific ways.

Getting started

- Choose organisational arrangements which can help foster a genuine interest in the unknowable future and make scenario exercises effective.
- Ensure legitimacy of the process through the participation of a wide cross-section of stakeholders and bring into situations that demand their interaction.
- Bring external facilitators on board to provide extra impetus to the process, as well as to create a neutral ground of discussion.
- Include experts in the team to ensure that the scenarios are well grounded both in relation to societal and educational trends.
- Involve stakeholders playing a key role in the area that the scenario addresses, be it colleagues, students, parents or policy-makers.
- Skilfully deal with points of resistance that often accompanies organisational change and creative processes.

The process

- Build scenarios on solid trends analysis to clarify and deepen the understanding of the major forces that underpin the change of education systems.
- Ensure that scenarios development processes take into account trends of both the outer world and the nearby environment, not merely the latter.
- Use a combination of participatory approaches to help participants think "outside the box" and question their own and others' values and assumptions.
- Take care of not moving too quickly to preferred scenarios and use also those scenarios which are less attractive, but just as likely.
- Allow time to identify and specify the values that support existing practices and structures and which appear in each of the scenarios.
- Ensure that the setting for policy-makers' participation is conducive for them to "let go" of control and act as participants rather than as owners of the process.

Benefits

- Use evaluation mechanisms throughout the initiative to obtain information on both benefits and criticisms and to measure its strategic impact.
- Incorporate capacity-building mechanisms in *futures thinking* processes, even if it is not the primary objective of the initiative, to ensure longer benefits within the system.
- Ensure that *futures thinking* initiatives always show tangible results, even if this is not the primary objective of the process. This can simply be in the form of reporting and lessons learnt.
- Be clear, precise and innovative in the method of presenting findings to avoid information overload that would distract attention.
- Make the work cumulative so that lessons learnt are carried over to new initiatives and feed into decision-making processes.
- Plan how successful and innovative pilot experiences can be replicated to other similar situations and thereby build a multiplier effect of futures work.