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16

Education in the Twenty-First Century

Commitment to the Future

- The state of education around the world
- The agents who should lead education
- The 10 principles of twenty-first century education
- A glance at the spanish case

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Many thanks.
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Executive Summary

We are now setting the pace of a new century, with all its promises and its possibilities. We have access to resources and capacities that would have seemed impossible a few short years ago. However, we face serious problems —a growing debt crisis, the threat of the economic stagnation and recession, increased social inequality among countries, war, etc.— and these are hampering efforts to achieve the dream of universal high-quality education.

The experts agree that there will be dramatic changes in the field of education (some are already visible) due to trends such as an unrelenting globalisation, the Internet, and mobile technology which provides free access to information and education, among others and the growing gap between highly-educated and others with a bare minimum of schooling. These changes have a significant impact on the profile of qualified people who have to face the world. Is today's education helping to shape this type of citizen? Sadly, if we look at the disturbing school drop-out rates, high graduate unemployment, dissatisfaction among lecturers and a failure to match contents to the real economic situation, the answer is all too obvious.

The challenge of reforming education –in terms of continuous training from earliest childhood to old age, must form part of the agenda of all agents of society. And it requires effective collaboration between individuals, families, educational institutions, business and government. The quality of education depends not only on the quantity of resources, but, above all on how they are used; how the system is organised and run; how teachers are trained and the motivation and support received by the social groups involved.

Will we find the recipe for perfect education in the twenty-first century? Getting the mix right will inevitably be a slow and complex task. In this report, the Future Trends Forum experts analyse some of the key ingredients which must be included in any magic recipe for training twenty-first century citizens to live and work together and overcome the great challenges they will have to face.

Dreaming up twenty-first century education: a list of principles
In its desire to contribute to a major reform of education, the Future Trends Forum has drawn up a list of all the elements we can use to encourage the creation of a more advanced community, provided with the tool of education to promote future economic growth:

- **Principle 1.** Education must be universal, global and a priority for all nations.
- **Principle 2.** Education must be democratised to make it affordable for all.

- **Principle 3.** We must ensure that education inspires and motivates teachers, students and society.

- **Principle 4.** Lifelong learning must be encouraged to ensure employability and the contribution of those who drop out of the formal education system.

- **Principle 5.** Education systems must include work experience in business management that increases effectiveness, as well as encouraging an entrepreneurial spirit among students.

- **Principle 6.** Education should not be limited to teaching academic knowledge, but should also provide a comprehensive grounding that includes emotional intelligence, creativity, values, imagination, corporal expression, capacity for concentration, etc.

- **Principle 7.** Personalization is a decisive factor for gaining in quality.

- **Principle 8.** One of the priorities must be to adapt the syllabus to the real socio-economic situation at any time.

- **Principle 9.** Innovative methods need to be adopted to achieve a more attractive and effective education. Training on-line and via mobile devices improves access to and the appeal of education.

- **Principle 10.** Education must be collaborative and give a more active role to the primary agents (the government, companies, parents, individuals themselves, etc.).

Education in Spain

The time has come in Spain to commit to changing its educational model for one that focuses on the individual and the knowledge that will enable us to change our production model. A new arrangement is required, giving a central place to productivity, if we are to catch up with other European countries. That will allow us to grow and, at the same time, to adopt work/life balance measures that help families to get involved in their children's education and thus contribute to the country's future. Working conditions in Spain, essentially comprising long working days with a long lunch break and seemingly little dedication by parents to their children's learning and personal development, have a pernicious effect on education. The business area has not undergone the necessary change in management culture and style to address the new situation most of their employees face as members of families in which both parents are working. Few organisations have yet introduced real work/life balance policies apart from the reduced working day imposed by law, which only extends until the children are aged eight.

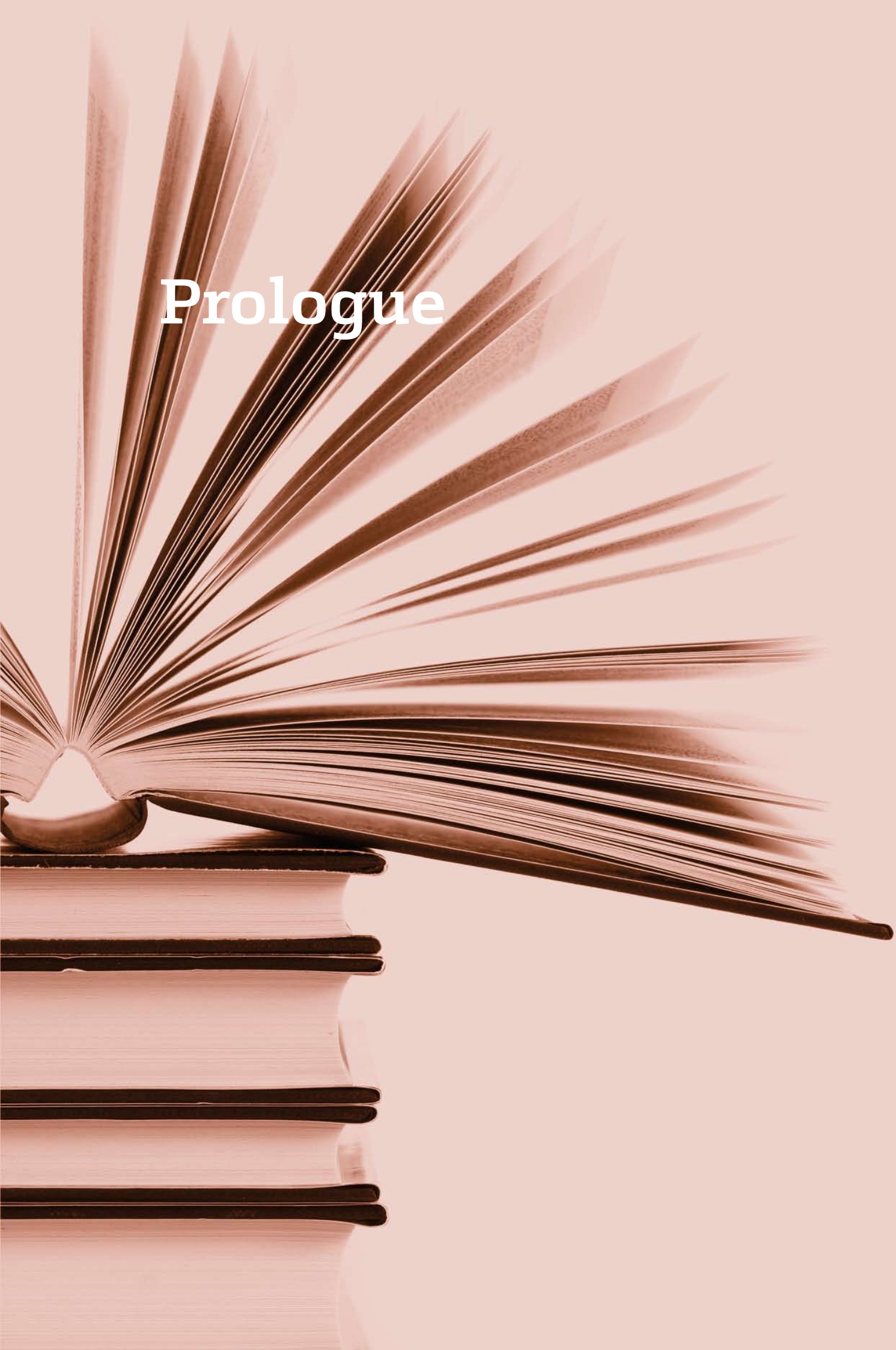
If we want Spanish children and young people to grow up to be the twenty-first century citizens who bring improvements to this country, shouldn't we begin by becoming a culture that prioritises productivity and work/life balance? Starting

with ourselves as parents, followed by our community (companies and education centres) and finishing up with our governments. The future of our country is being written every day in the classroom.

***

Education and knowledge are becoming ever more important in a global world. The quality of education depends not only on the quantity of resources, but, above all, on how they are used, how the system is organised and run, how teachers are trained and the motivation and support of the social groups involved, especially the families. Greater coordination is required between the educational area and other spheres of our society (companies, governments, families, individuals, etc.). In short, an educational system is needed that achieves the commitment and co-responsibility of all agents in education from the earliest childhood to old age, to make equal opportunities a tangible reality.

Prologue



Education is one of the great levellers of society. By mastering academic and social skills, people begin to take control of their own lives: they are better placed to provide for themselves and their families, to have a wider range of professional and career opportunities, to earn better salaries with which to buy goods and services (apart from the essentials such as food, clothes and housing) and to participate actively in civil matters. In the political sphere, an educated population participates in making the political decisions that affect their own future. At best, the more educated a society is in the humanities, science and the arts, the better it will understand the characteristics of its neighbours. Although it might be asking too much to expect education to prevent armed conflict, one can hope that education might at least inspire tolerance and an understanding of different points of view and lifestyles.

Education is the backbone of prosperity, since it increases the standard of living of people and communities.

Although most contemporary societies consider education to be a basic right for all their citizens, the costs of educating children (from day care centres to secondary school), and advanced education for adults in higher education establishments, have become unaffordable for individuals and governments, since the options are mutually contradictory.

The results of education (mastering skills, completing the regulation years of education –graduation rates– and getting paid employment) do not offset the costs incurred. Education is a need, but the business of education is inefficient. A cost-benefit analysis shows that investment cannot always be justified.

For centuries, tools have been used to promote the learning process. With pictures and letters, people have drawn ideograms in caves, carved slabs of marble, printed books and drawn stories in frescoes. We have devised weights, measures and mathematical symbols; we have invented the abacus, the telescope, the microscope, the calculator and the computer. Information technology –as a method of collating and disseminating knowledge– has in one way or another formed part of humankind from the earliest times. The very concept of development is part of the chain of information technology.

Today, electronic technology means that generating, storing and transferring information is easier and quicker than ever before; it has brought about a revolution in teaching methods and study materials and it has changed the traditional relationship between pupil and teacher. For two millennia, academic experts have taught novice apprentices. Now, students have become co-creators in the learning process. This brand-new world of technology has entailed a root-and-branch innovation of education.

In order to understand better the way in which the technology of today and tomorrow strengthens the learning process and how it can help society to provide a cost-efficient and highly productive education, Bankinter's Future Trends Forum has looked at a number of learning models.

Experts from around the world, including Spain, Japan, England, Singapore, the USA, China, India, the Netherlands and many other countries, working in the

fields of education, psychology, physics, bio-engineering, law, game theory, business science and other disciplines, presented projects, exchanged comments and drew up guidelines around some essential questions:

- What are the most relevant problems facing education?
- What primary and initial steps need to be taken to tackle these issues?
- What are the greatest potential obstacles to these solutions?

The sessions outlined the principal subjects, weighed up the political alternatives and analysed the first steps needed to implement them. The framework of discussion was designed to adapt to different societies and countries.

This forum followed the principal guideline, successfully implemented in previous sessions of the Future Trends Forum, that bringing together a combination of global thinkers, managers, researchers and politicians, would strike the spark of innovation.

Stephen Joel Trachtenberg
President Emeritus of the George Washington University and trustee on the Bankinter Foundation of Innovation.

1 Introduction

- "Cloud" versus "fog"
- A recipe for a perfect education

Educating for the twenty-first century: "Cloud" versus "fog"

We're now more than a decade into the twenty-first century. Much has changed: the way we socialise, the way we learn about global events, the way we look for information and the way we tell everyone else who we are over the Internet. With all the changes in leisure, business and finance and all the information available over the Internet and on our smartphones, there is still one sector in our society that keeps its feet stubbornly planted in the twentieth century... education.

The very term "education" belongs in a physical space, a government regulation, a working environment for adults. It keeps students at arm's length. Students are merely the produce of education and have little or no say in their educational process. Although most other areas of life now offer greater flexibility in terms of how and when we work or play, schools and colleges are still marked by a very precise timetable, a very specific location, an established set of roles (with students in the inferior position) and a carefully thought-out set of contents. This is a strictly-ordered world.

The rest of the twenty-first century —in the workplace, in the shops and in consumerism— is going in precisely the opposite direction. It has become ever more open; institutional boundaries are almost meaningless and people of all ages get involved in many different ways. It is as if a new ocean had been discovered on which we are all sailing, yet young people are still forced to move in a very rigid educational space. They have to lead a double life: one in which they interact freely and another where they have to obey orders.

It is a head-on collision between different worlds. This is what I call the **"**cloud**"** versus the **"**fog**"**. The "cloud" has become a synonym for all things virtual, controlled over the Web or via a mobile network, with its base on a server. The cloud learns very quickly from its users. It is capable of compiling data on them, combining it and sharing it with other users, advertisers and researchers. The **"**fog**"**, on the other hand, is what we see in schools and colleges and in political circles. Unlike clouds, which form a useful layer over our heads, fog surrounds us, obscuring our view of what is happening in the educational space around us.

The fog of education is a dense mixture of historical inertia, bureaucratic lack of imagination and legislative blockages. In the last decade, it was assumed that **"**technology**"** would blow away the fog, but it hasn't. Indeed, in some areas the fog has thickened, with more agents occupying an area that is already crammed with political rhetoric, legislative inaction and divergent and improvised practice. What we are leaving out are the students, their voice and their role as designers and as stakeholders in their own learning.

This is not a call for anarchy or entirely open education. No, it is an argument in favour of being brave enough to include young people, who practically live in the cloud, and those who work in it, in the debate on how to clear the fog and see more clearly. Let's see what that might entail.

I would argue that there are at least four irreconcilable "factions" in education who will defend their territory tooth and nail. I am referring to government structures, stakeholders who need trained workers, those who manage schools and colleges and the students themselves. We could abbreviate and describe them as the nation (or state), the stakeholders, the schools and the students. Stakeholders and students are looking for the same thing: better and more efficient ways of learning that translate into better salaries for workers, who can thus contribute to national wellbeing. The state and the schools, regardless of how motivated they are, have a pre-established interest, which is to maintain the *statu quo.*

What is the answer to the dilemma described in this report? As you shall read in the next four chapters, the forum gathered together a group of individuals representing government, stakeholders, schools and universities —but not students. We discussed what education needs. We reached a common position, from which we distilled ten key principles. The nub of what we have to say is that we are a global community, without students having an active role in their own education, and that education is a human right, not a government formalism.

Agreement is all well and good, but it is not enough to start things moving. So how do we start things moving? How can we clear the fog that surrounds education without just generating even more? I think the answer is to be found in the principles of the cloud. The cloud creates an identity for its users and that encourages people to be interested in maintaining their own identity. It creates a pride in belonging. The cloud encourages interactions, transactions and communications which further reinforce a simultaneous feeling of identity and community. These are the key features of the learning communities that can replace rigid educational structures. Finally, the cloud reviews the data, highlights patterns and trends and can take corrective or adaptive action.

The principles of the twenty-first century can be applied to configure education with the necessary security and guarantees, just as on-line bank data is carefully protected. So, to sum up, the cloud-based principles that may help blow the fog away are:

- **Identity.** Identity formation and management, with regard to personal identification and pride in learning.

- **Education in communities** that associate students' identities to groups of pupils who are similar in the way they learn, thus helping

them not only to master the contents, but also to apply it to real-world situations.

- **Compilation of data** on trends in learning and teaching, on contents, with legislative support, and on the student's progress and his or her problems.

What separates these three principles from the cloud of the worlds of school and higher education are information systems, not educational technologies. These smart systems can be protected and positioned in our lives alongside other similar systems, systems to which all pupils can connect. Even if they go to a traditional school or regional university, they can use them to monitor their progress and their possibilities and learn there what they cannot obtain at local level. They need not be isolated.

What does all this mean for education in Spain? Spain has a magnificent opportunity to innovate while other countries are standing still. There is still not a country in the world that has said that it is going to completely reassess its education sector and propose daring, more democratic measures in terms of education and learning, in line with the way in which we "process" the rest of society.

Spain has the chance to lead and influence global actions in the name of all students, giving them the right and access to learning and education.

Gordon Freedman
Vice President, Global Education Strategy
Blackboard Inc., USA.

In a constantly developing world, one of the keys to success is to know how to anticipate change and the possible impact it will have on us in the medium to long term future. If we master this knowledge, we can identify and exploit future business opportunities. Achieving this goal requires certain tools, amongst which an analysis of future trends is important. Bankinter set up its Foundation of Innovation with a clear objective: to influence the present by looking to the future and to stimulate the creation of business opportunities at the cutting edge of technology and management, with a view to promoting innovation in the Spanish business world. It is an ambitious and innovative project, and one by which Bankinter hopes to stimulate the creation of business opportunities. The project involves over three hundred international expert opinion leaders from different disciplines, hailing from around the world, and a superb board of trustees. The project is also intended to reinforce Bankinter's commitment to society.

The Future Trends Forum (FTF) is the Bankinter Foundation of Innovation's most important and most fully consolidated project. It is the showcase of Bankinter's culture: innovation and a commitment to development. The Future Trends Forum is Spain's leading forum for long-term forecasting and innovation and embraces top scientists, academics, businesspeople, entrepreneurs and other leading international intellectuals. It is the only multidisciplinary, multi-industry and international think-tank in Europe. It seeks to convey all the objectivity of a forum enriched by a range of viewpoints, which remains unbiased and unswayed by private interests of any kind.

The forum strives to predict the immediate future by detecting the social, economic, scientific and technological trends that are most likely to change the way we live and work, analysing possible scenarios and impacts on current business models in sectors that will be most affected. From these deliberations we try to determine the best way of creating wealth out of the situation. These recommendations are intended to be circulated amongst different strategic spheres of society

The Future Trends Forum members themselves can propose issues for discussion and a vote is taken on those that will eventually be addressed. The final result comes when the conclusions of this survey of employers, professionals, top management, companies and institutions are circulated. This phase takes the form of the publication of this report and a series of lectures given in the larger cities in Spain.

This latest publication, prepared with Accenture as the main collaborator, sets out the conclusions of the Future Trends Forum on the ingredients needed in the "recipe" to achieve the perfect education for the citizens of the twenty-first century.

We start by explaining what the experts understand by education and go on to analyse the status of the education in the world as a universal right. We examine the importance of talent for gaining positions in the world power map.

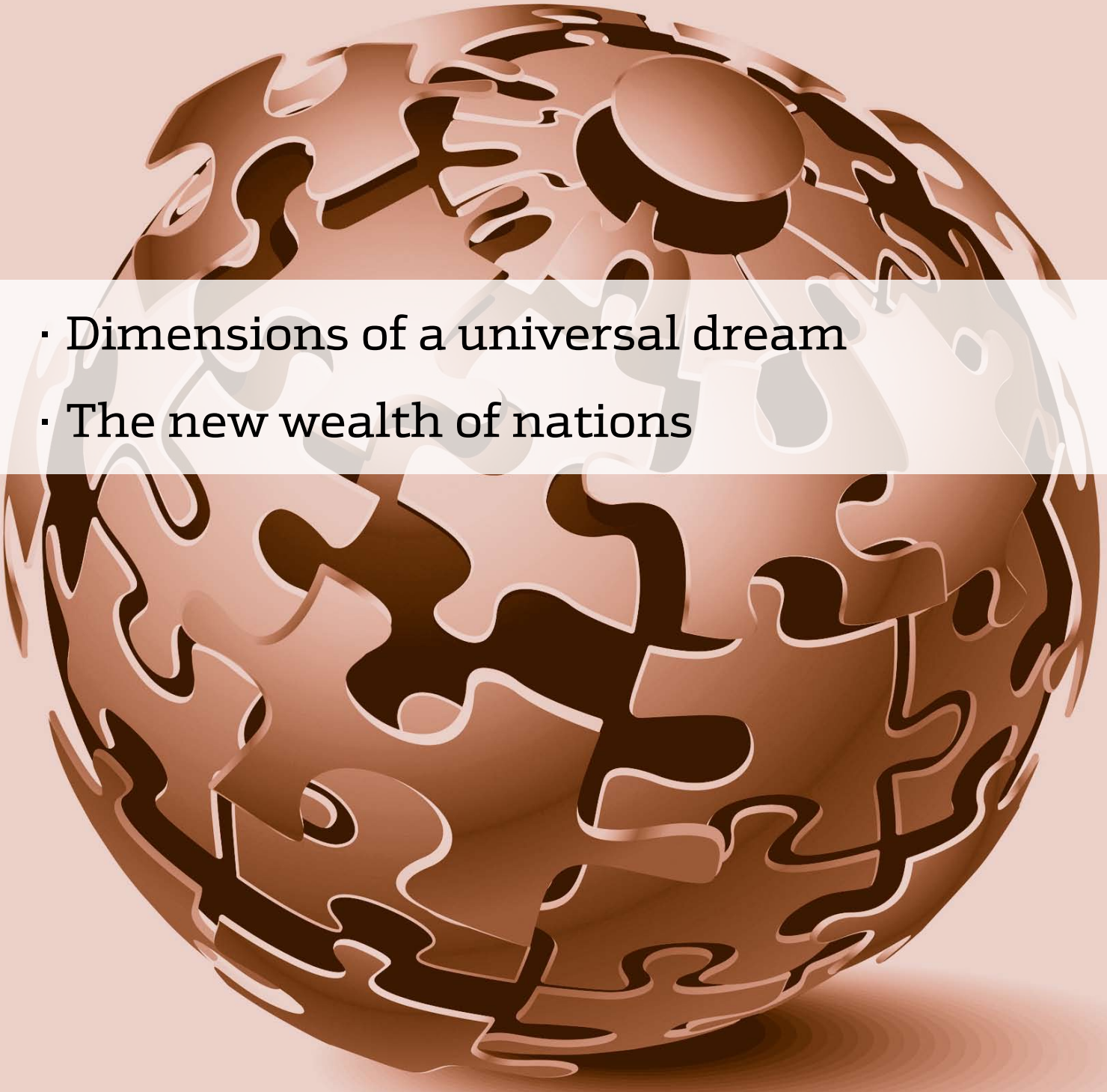
We then go on to analyse the role that should be played by the different agents in the educational area: government, business, the family, the individual and NGOs. We describe the principal aspects that each of them should address to improve the education people should receive from earliest childhood to old age.

There follows a decalog of defining principles for the education we all wish to see for the citizens of the twenty-first century. It should be: universal, global and a priority for all nations; democratic; inspirational; continuous; efficient and enterprising; comprehensive; personalised; in line with the needs of the future; innovative and collaborative.

The last part of the publication focuses on an analysis of the status of education in Spain and offers some guidelines that may help the country to grow by evolving towards a knowledge economy.

Once again, the Bankinter Foundation of Innovation hopes that this new publication will serve as a source of knowledge. Above all, though, we hope that will stimulate and guide professionals and companies so that together we can advance towards a global economy whose foundations are based on the education we all desire for the twenty-first century.

2 Current Situation of Education in the World

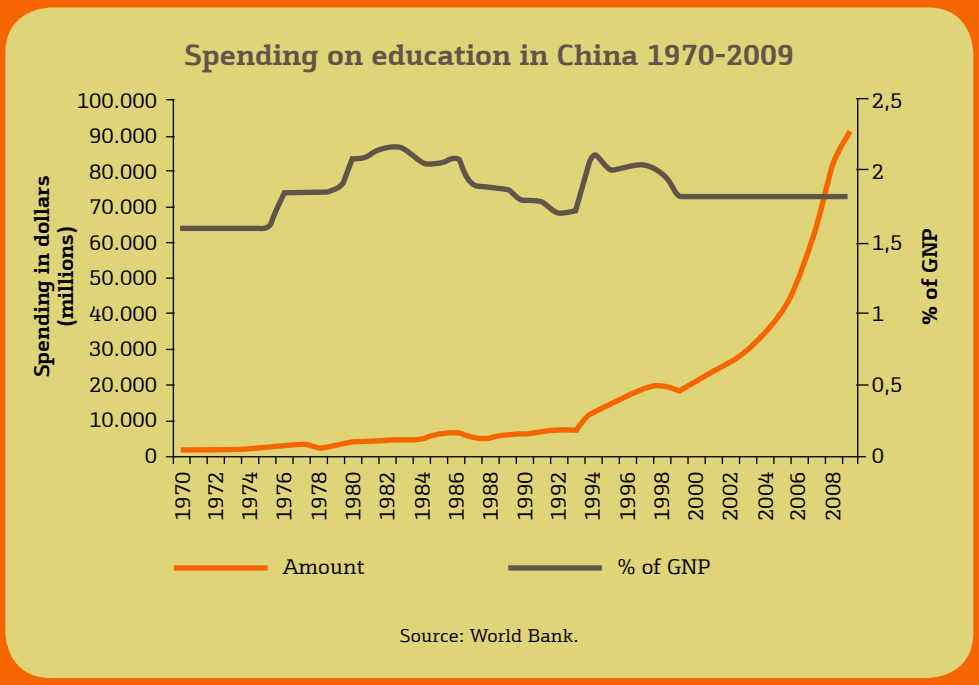


· Dimensions of a universal dream

· The new wealth of nations

China and global education

Chinese education has expanded and globalised on a par with the country's economy. The graph below shows the extent of the change. While spending on education as a proportion of gross national income (GNI) has remained quite stable, total spending in this area has grown as rapidly as the national economy. Enrollment in higher education institutions and universities has increased exponentially since the end of the 1990s. Each year, China produces over 6.5 million university graduates, twice as many as the USA. Although this rapid expansion in higher education has run into some setbacks, generally speaking there is no question that the top Chinese colleges have gained ground in terms of the resources available to them and the quality of the education they offer. The rise in Chinese higher education, especially in natural science and engineering, has contributed to maintaining the rapid expansion of the top Chinese companies, such as Huawei, which has become the world's second-largest telecommunications equipment manufacturer.



Source: World Bank.

Given China's size and economic dynamism, top colleges from developed economies have been steadily establishing a presence in the country. This has not happened overnight, however. The Chinese educational sector was one of the most harshly persecuted during the Cultural Revolution, when most universities had to close down and lecturers were sent to work on the land. It therefore comes as no surprise that China's education leaders went about the business of collaborating with foreign universities with extreme caution.

One of the first programmes was the Johns Hopkins-Nanjing Centre at the University of Nanjing. Although it was initially only a one-year joint diploma on international affairs, the institutions and public authorities involved invested several years and vast amounts of work before the programme could be launched, twenty-seven years ago.

Today, the elements of globalisation are very visible in all the leading Chinese university campuses: foreign students, teaching staff who have completed their postgraduate studies abroad, classes given by renowned foreign lecturers and researchers, Chinese lecturers who have studied abroad and student exchange programmes between China and other countries. A small number of top universities have even begun to hire non-Chinese lecturers on a long-term basis. China is the largest source of foreign students for the US and other countries, but it is also becoming a preferred destination for foreign students.
Given the Chinese economic boom, it is hardly surprising that business education leads the way in this process of educational globalisation. At the end of the 1970s, at the beginning of reform era, China did not have a single business school or business programme. Today, Chinese businesses schools each year attract thousands of foreign students to their programmes. On definitive sign that China has joined the global throng is that certain Chinese institutions, such as the Cheung Kong Graduate School of Business and the China European International Business School (CEIBS) have recently begun to offer programmes abroad. With the transformation of China into the world's second-largest economy, it is only natural that it should play a greater role in areas such as education and that its position should be proactive.

In recent years, a growing number of foreign universities have gone one step further than the usual overseas education programmes with China. The great American research universities have set up centres in Beijing (Chicago, Columbia and Stanford) and Shanghai (Harvard), to promote academic exchange and collaboration in research. The University of Chicago Beijing Center, for example, is an initiative that encompasses the entire university to offer space and support to the community of this educational institution in China. It has managed to forge a rich and valuable partnership with many Chinese universities and research academies to collaborate on interdisciplinary research, experimental student education opportunities and international lectures.
Chinese legislation requires that foreign institutions enter partnerships with Chinese colleges to award degrees. Despite the difficulties in operating these partnerships (who can forget the Beijing Jeep debacle?) a series of prominent American and British universities have taken —or are about to take— this big step. The University of Nottingham has set up a campus in Ningbo, while the University of Liverpool is in partnership with the University of Xi'an Jiaotong to create the Xijiao Liverpool University in the new economic centre of Suzhou. The New York University is partnered with the East China Normal University to develop a city campus in Shanghai, while Duke University has teamed up with

the University of Wuhan to develop a campus in Kunshan (in Suzhou and about 65 kilometres from Shanghai, but a long way from Wuhan). All of these associations have received generous support from local government in the form of land and financing.

These campuses, which award university degrees, entail different levels of commitment. The University of Nottingham runs the Ningbo campus like any other of its three campuses; New York University probably does the same with its facilities in Shanghai. Xijiao Liverpool appears to be more immersed in the Chinese system and Duke is still fighting to get faculty to support the Kunshan initiative. It will be fascinating to see what the global education historians of the future make of these partnerships. and whether their promoters have been capable of negotiating the complex regulatory situation and the operating system of China (and other countries), while at the same time maintaining the support of teachers at home and the integrity of the institution in different continents, and if so, how. No doubt there will be great successes and great failures.

In this globalised world, everything we do today is marked by what happens in China: from medicine to music, by way of energy and the economy. These ambitious efforts by foreign educational institutions, combined with the reforms taking place on Chinese campuses, suggest that China has become a centre for innovation in higher education and that the country's education system is gradually being transformed. The fact that a growing number of Chinese students are studying abroad and then returning to China promises to reinforce the experience at home.

Dali L. Yang
Professor of Political Science and founding Faculty Director of the University of Chicago Center in Beijing.

"Only the educated are free",
Epictetus, Greek Stoic philosopher who spent
most of his life living as a slave in Rome.

From the Greek *paideia*[1] of the eighth century BCE to the spread of Confucian thought in the sixth century BCE, many civilisations have laid the foundations of education in their societies through the transmission of knowledge, values, customs and ways of doing things. However, education was often restricted to the elite and the rich. It was not until the Industrial Revolution that a process of mass education began, with large numbers of the new migrants from the countryside to the large cities becoming literate. Mass literacy was promoted not because it was considered necessary for work in the factories, but because education had been shown to have social benefits that affected both the individual and the economy as a whole[2]. Education generates economic wealth, social welfare and political stability. The need for education is now so completely accepted in our society that the second half of the twentieth century will go down in history as the period that saw the most spectacular spread of higher education. Approximately 6.7% of the world population –more than 460 million people– have a university degree[3]; in countries such as the USA the figure is has high as 27%[4]. And the percentage continues to rise spectacularly as emerging countries step onto the international competitive stage.

In the same vein, Benjamin Franklin said "An investment in knowledge pays the best interest". Viewing education as an investment can be justified on the grounds that education today plays a key role in the labour and human capital economy[5]. Indeed, the idea of completing a medium- or higher-level educational cycle is often used in college introductions to economics as an example of the concept of "shadow price". Investing time and money in a university education is supposed to increase the probabilities of achieving a job with better pay and greater professional responsibility. And we say "supposed to" because, as we shall see, the system can run into serious difficulties, as in the case of Spain.

Yet if education is considered to be such a worthwhile investment, why do different countries not spend the same amount on their education systems? Why is it not prioritised to the same degree everywhere? And more important, why is education still not a universal right in all countries?

More than fifty years ago, in the Universal Declaration of Human Rights, the member countries of the United Nations agreed that everyone had the "right to an education". Despite the undeniable advances made throughout the world, the figures show that millions of people still do not share in the dream.

At the same time, the world is facing very serious problems: the growing debt burden, the threat of economic stagnation and recession, rapid population growth, an increase in social inequalities between countries, war, occupation and conflict, crime, the avoidable death of millions of children and environmental degradation. These problems hamper efforts to respond to basic educational needs in developing countries, while at the same time the lack of a basic education for such a significant part of the population is preventing societies from tackling these problems vigorously and effectively[6]. It is a vicious circle. In developed countries, where the goal of universal basic education has been achieved, economic problems and power struggles are hampering the ambitious task of achieving quality education that meets people's employment, social and coexistence needs.

[1] Basis of Greek education under which men were trained to exercise their civic duties.

[2] Juan Luis Rubio Mayoral, "Desarrollo económico y educación. Indicios históricos en las primeras "Revoluciones Industriales"", Universidad de Sevilla, 2006.

[3] "6.7% Of World Has College Degree", TheHuffingtonPost.com.

[4] "How Many Have Bachelor's Degrees?", FactCheck.org.

[5] Capital Humano y Rendimientos de la Educación en México, Fernando Barceinas Paredes (Universitat Autònoma de Barcelona, 2001).

[6] The Dakar Framework for Action, UNESCO, 2000.

We now have access to resources and capacities that would have seemed impossible a few short years ago. Will we find the recipe for perfect education in the twenty-first century?

We also start from the base that the concept of *education* is somewhat ethereal and that there is a great diversity of opinions as to its scope and implications (reflected even among the Future Trends Forum experts). This makes it difficult to measure the success or failure of different education systems, and the factors that determine that success.

The world is setting the pace of a new century, with all the promises and possibilities it holds out. Major steps have been taken towards greater peace and cooperation between nations. increasingly, the essential rights of women are being respected and their potential is being fulfilled. Major new cultural and technological developments are emerging. Quantities of information are now available that would have been inconceivable until recently, including information on how to promote relevant knowledge and "learning to learn". And important synergies arise when this information is combined with our newfound capacity to communicate[7]. We now have access to resources and capacities that would have seemed impossible a few short years ago. Will we find the recipe for perfect education in the twenty-first century?

Clearly, the variables involved in creating this "recipe" are immensely complex and necessarily slow to put into practise, and it would therefore be presumptuous to seek to answer this question here. We shall start by making a short diagnosis of the situation in Chapter 2. In Chapter 3 we will set out a list of best practices that may help to get closer to this "recipe".

2.1. Education: dimensions of a universal dream

"Education is the passport to the future, for tomorrow belongs to those who prepare for it today",
Malcolm X (born Malcolm Little; 1925-1965: orator, religious leader and human rights activist).

To solve –or at least to attempt to solve– a problem, it is essential to start by defining it. What is the goal of education? The answers to this question from experts attending the sixteenth Future Trends Forum included "access to opportunities", "training for future citizens and employees", "preparation for life", "social order for society" and "the acquisition of knowledge".

Part of the difficulty in reaching consensus on the definition, scope and implications of education lies in the fact that it is a constantly-changing playing field. Is the concept of education going to change over the next ten years? According to the Future Trends Forum experts, there will inevitably be dramatic changes in the educational terrain due to a series of macroeconomic trends which can already be seen and which are speeding up change in all areas:

- The unrelenting spread of globalisation which requires a global, polyglot and multicultural populace;
- Increased freedom of individual choice in issues such as politics;
- Internet and mobile technology affording free access to information and training;
- A growing gap between highly-educated populations and those with only the most limited rates of schooling and no access to IT;
- The speed of change, an unprecedented uncertainty; and

[7] The Dakar Framework for Action, UNESCO, 2000.

Disturbing rates of school failure, high unemployment rates among young graduates, low satisfaction rates among teachers, etc., require urgent reform of the education system in developed countries

- The fact that knowledge is increasingly being acquired through personal networks and individual effort.

These changes are having a significant impact on the professional profile of qualified people who have to go out into world after spending a (varying) length of time in their education systems. They also necessitate radical changes in the way these people view and experience education, which must accompany them to the end of their days. In a constantly changing world, people must be able to adapt quickly, thanks to a complete education ranging from knowledge to the ethical and emotional values, and taking in a broad range of skills. They must have the potential to learn new things and a commitment to the sustainability of the world they temporarily inhabit. It is true that we have never before had such a diversity of resources and educational methods available; nor has there ever been a greater international consensus on the importance of education. Yet it is also evident that many education systems do not work, though not for the same reasons in all countries. What is going wrong?

Disturbing rates of school failure, high unemployment rates among young graduates, low satisfaction rates among teachers and the failure to adapt the contents of education to the real economic situation: these are all factors that require urgent reform of the education system in developed countries (as we shall see, the problem in developing countries centres on such an essential issue as access to education). Moreover, many people consider that the current crisis is the result of a lack of ethics among the senior management of certain companies. Are our education systems looking after aspects such as ethnical and emotional education to improve coexistence and create a better world for its future inhabitants? The situation requires a reappraisal of education among all agents involved; a new approach that questions the basis and the way in which the citizens of the twenty-first century are educated. We are all born with an innate desire to learn, but experience shows that this interest often fades as the years go by (or at least, in relation to the current contents of education systems).

The millions of people searching the Internet for information are proof that this thirst for knowledge is still alive, even if it is not being channelled through an often obsolete education system. People want to learn, but they find traditional methods increasingly inefficient and unattractive; the contents are uninteresting and the institutions ever more bureaucratic. As a result, many turn to self-education at a time when it is becomingly increasingly easy to access vast stores of information. While the fact that people are receiving part of their education outside the classroom is no doubt a positive step, unregulated learning via the Internet and similar forums has removed a basic filter that can help "guide" or "lead" them by raising cultural, moral and behavioural awareness — as reflected in the origins of the word "education" (from the Latin *educere* "to guide, lead" or *educare* "to form, instruct"). Teachers are a key element in an innovating society. Their knowledge and skills and their capacity to inspire not only improve the quality and efficiency of education, but also encourage research.

2.2. The universal right to education: a utopia obscured by social and geographical differences

"Nature made us brothers, but education divides us",
Chinese proverb.

Many of the ideas and concepts we have talked of here make sense in the so-called "knowledge societies" typical of a developed socio-economic context, i.e., a

Many lack the necessary peace and stability to provide the opportunities and choices people need

society that feeds off its diversities and skills[8]. However, the relevance of these problems tends to fade in developing countries. Many lack the necessary peace and stability to provide the opportunities and choices people need. In such contexts, universal education is a utopia that is obscured by social and geographical differences. Did you know that universal primary education would cost about ten billion dollars a year, equivalent to half of what Americans spend on ice cream?[9] That puts things in perspective, doesn't it?

What is being done to ensure education as a basic universal right? One of the UN Millennium Development Goals states: "By 2015, all children can complete a full course of primary schooling, girls and boys"[10]. At present, around 69 million children of school age do not attend school. Nearly half (31 million) live in Sub-Saharan Africa, and another quarter (18 million) in Southern Asia. Unfortunately, the necessary momentum has not been achieved to reach the UN target. Moreover, in some Sub-Saharan countries it is practically impossible to collect reliable data. Rather than seeing the glass as being half-empty, however, we want to look at the factors that have helped primary school enrolment in developing countries to begin to increase. Key factors include abolition of school fees, investment in infrastructure and resources, promotion of education for girls, extending access to education to rural and remote areas.

At the other end of the spectrum, in many developed countries education is free for all students —paid for obviously, through taxes. However, due to the scarcity or low quality of publicly run schools, and difficulty in accessing public education because of over demand, private and parishes school abound in many countries. Indeed, enrolment in such schools in Spain has shot up in recent years with the promise of higher quality bilingual education, with more personalised attention and a greater emphasis on ethical and moral conduct. Religious orders such as the Jesuits, or the Opus Dei, have a long and proven tradition in education.

Interestingly, there is no correlation in developed countries between the success of an education system and classroom hours or homework time. Finland is recognised as having one of the best education systems in the world, yet pupils do not begin school until they are seven, and only attend class for four or five hours a day for the first two years. Tuition, food and transport from rural areas are entirely free.

2.3. The new wealth of nations

"Nations march towards greatness at the same pace as their education",
Simón Bolívar, leader of the Hispanic-South American struggle for independence.

Free movement of people, capital and goods or services was the key element in the process of globalisation that accompanied the latest wave of prosperity. We are in the throes of a profound economic crisis in which flows of trade and capital have been seriously dented and human capital is seen as being essential for escaping this situation. It will also be of vital importance when it comes to tackling the great challenges that must be accepted by the new generations, such as global warming, demographic changes and the sustainability of the capitalist system (see the eleventh publication by Bankinter Foundation of Innovation, *Competing in Challenging Times*).

At the beginning of this chapter we spoke of education as being an important aspect in the development of the human capital of any modern society, given that

[8] *Towards knowledge societies*, UNESCO 2005.

[9] ActionAid.

[10] The Dakar Framework for Action, UNESCO, 2000.

it constitutes a motor of economic growth and an effective instrument for addressing inequality. Acknowledging this importance, the UN has included education among the factors, together with health and living standards, measured in the Human Development Index. The indicators used by the organisation to measure human development in education are "average years of schooling" and "expected years of schooling" (See Illustration 1)[11].

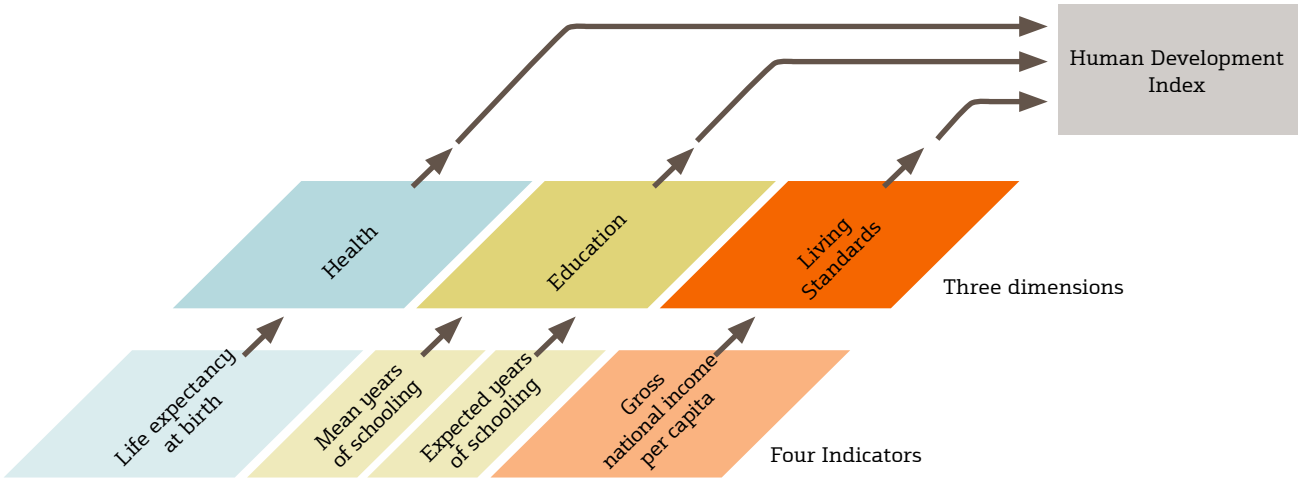


Illustration 1: Components of the Human Development Index.
Source: Human Development Report Office, United Nations Development Programme.

Increasingly organisations such as the International Monetary Fund (IMF) and the World Bank are intervening in social policy, including education. The reason is the need to establish viable long-term reform programmes and follow them up in order to ensure compliance with proposed human resource development targets. This process is monitored using indicators such as the Programme for International Student Assessment, or PISA Report. Every three years, the mathematical, scientific and reading literacy of international students aged fifteen in over sixty countries is analysed. This benchmarking process is carried out by the OECD and allows governments and educational establishments to rate the position of their countries' school education and propose measures for improving it. In the 2009 report, countries such as Finland, South Korea, Japan, Canada, Australia and New Zealand head the list of OECD Countries (See Illustration 2). Spain, on the other hand, stands below the OECD average in all three skills measured and behind some non-OECD countries such as China and Singapore.

The quality of a country's human capital will be a differential element for gaining ground in the new world power map emerging from the crisis. The Chinese government is giving funds and resources to programmes that help promote its education system. The proportion of GDP it spends on investment in science and technology is increasing, though it still lags behind the US. Citations and patents have also increased significantly, with a doubling in patent share in recent years. In addition, new models of collaboration have appeared, with American universities opening campuses in China, (e.g. Chicago

[11] *The Real Wealth of Nations: Pathways to Human Development*, United Nations Development Programme.

	On the overall reading scale	On the reading subscales					On the mathematics scale	On the science scale
		Access and retrieve	Integrate and interpret	Reflect and evaluate	Continuous texts	Non-continuous texts		
Shangai-China	556	549	558	557	564	539	600	575
Korea	539	542	541	542	538	542	546	538
Finland	536	532	538	536	535	535	541	554
Hong Kong-China	533	530	530	540	538	522	555	549
Singapore	526	526	525	529	522	539	562	542
Canada	524	517	522	535	524	527	527	529
New Zealand	521	521	517	531	518	532	519	532
Japan	520	530	520	521	520	518	529	539
Australia	515	513	513	523	513	524	514	527
Netherlands	508	519	504	510	506	514	526	522
Belgium	506	513	504	505	504	511	515	507
Norway	503	512	502	505	505	498	498	500
Estonia	501	503	500	503	497	512	512	528
Switzerland	501	505	502	497	498	505	534	517
Poland	500	500	503	498	502	496	495	508
Iceland	500	507	503	496	501	499	507	496
United States	500	492	495	512	500	503	487	502
Liechtenstein	499	508	498	498	495	506	536	520
Sweden	497	505	494	502	499	498	494	495
Germany	497	501	501	491	496	497	513	520
Ireland	496	498	494	502	497	496	487	508
France	496	492	497	495	492	498	497	498
Chinese Taipei	495	496	499	493	496	500	543	520
Denmark	495	502	492	493	496	493	503	499
United Kingdom	494	491	491	503	492	506	492	514
Hungary	494	501	496	489	497	487	490	503
Portugal	489	488	487	496	492	488	487	493
Macao-China	487	493	488	481	488	481	525	511
Italy	486	482	490	482	489	476	483	489
Latvia	484	476	484	492	484	487	482	494
Slovenia	483	489	489	470	484	476	501	512
Greece	483	468	484	489	487	472	466	470
Spain	481	480	481	483	484	473	483	488
Czech Republic	478	479	488	462	479	474	493	500
Slovak Republic	477	491	481	466	479	471	497	490
Croatia	476	492	472	471	478	472	460	486
Israel	474	463	473	483	477	467	447	455
Luxembourg	472	471	475	471	471	472	489	484
Austria	470	477	471	463	470	472	496	494
Lithuania	468	476	469	463	470	462	477	491

	On the overall reading scale	On the reading subscales					On the mathematics scale	On the science scale
		Access and retrieve	Integrate and interpret	Reflect and evaluation	Continuous texts	Non-continuous texts		
Turkey	464	467	459	473	466	461	445	454
Dubai (UAE)	459	458	457	466	461	460	453	466
Russian Federation	459	469	467	441	461	452	468	478
Chile	449	444	452	452	453	444	421	447
Serbia	442	449	445	430	444	438	442	443
Bulgaria	429	430	436	417	433	421	428	439
Uruguay	426	424	423	436	429	421	427	427
Mexico	425	433	418	432	426	424	419	416
Romania	424	423	425	426	423	424	427	428
Thailand	421	431	416	420	423	423	419	425
Trinidad and Tobago	416	413	419	413	418	417	414	410
Colombia	413	404	411	422	415	409	381	402
Brazil	412	407	406	424	414	408	386	405
Montenegro	408	408	420	383	411	398	403	401
Jordan	405	394	410	407	417	387	387	415
Tunisia	404	393	393	427	408	393	371	401
Indonesia	402	399	397	409	405	399	371	383
Argentina	398	394	398	402	400	391	388	401
Kazkhstan	390	397	397	373	399	371	405	400
Albania	385	380	393	376	392	366	377	391
Qatar	372	354	379	376	375	361	368	379
Panama	371	363	372	377	373	359	360	376
Peru	370	364	371	368	374	356	365	369
Azerbaijan	362	361	373	335	362	351	431	373
Kyrgyzstan	314	299	327	300	319	293	331	330

Countries marked in black are OECD Countries and Countries in orange type are non OECD countries.

Statistically significantly above the OECD average
Not statistically significantly different from the OECD average
Statistically significantly below the OECD average

Ilustración 2: Ranking of Countries in the Pisa Report.
Source: PISA Report 2009.

University which now has a centre in the financial district of Beijing). All of these factors are generating great interest among non-national companies, investors and teachers, and also among the young people themselves, keen to take their education on to the next level to compete on a global stage (see Illustration 3).

These initiatives show that some emerging countries are trying to halt the current "brain drain", retaining the skilled professionals who are so essential for speeding up social and economic progress in their country. This requires establishing an

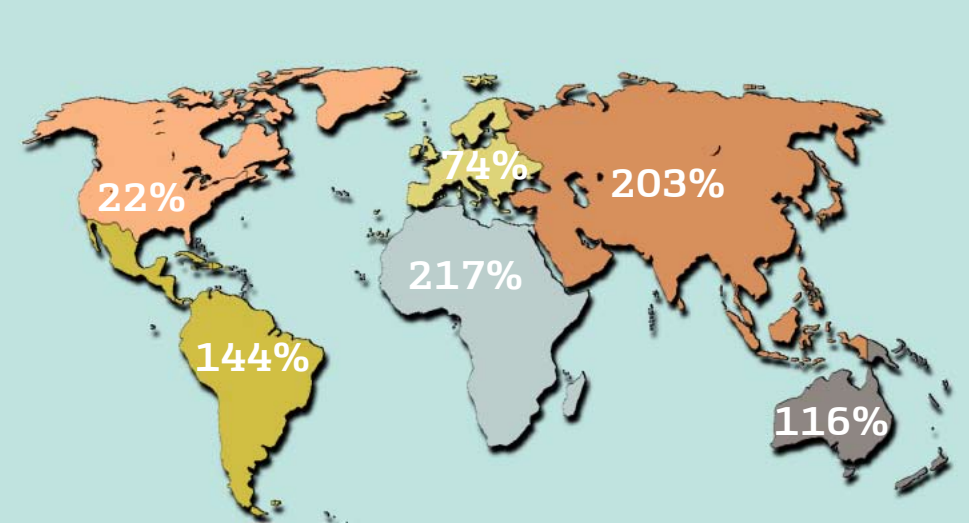


Illustration 3: The global explosion in higher education enrolment (1990-2007).
Source: http://chronicle.com/article/Chart-More-College-Students/48516/.

environment that will attract and retain skilled human capital through national policies and international agreements that encourage specialists and researchers to return to their home countries [12].

The US, which tends to be seen as a global reference point in any ranking, received a below-average score from PISA in mathematics and barely managed to surpass the average in science. Internationally, the country is well behind others that spend substantially less on their education systems. The Future Trends Forum experts point out the number of teachers in the USA has increased by 60% since 1970, yet their students' grades have remained unchanged. The same is true in many developed countries. If state education were a business, it would have been closed down years ago for not producing enough qualified students for the work force.

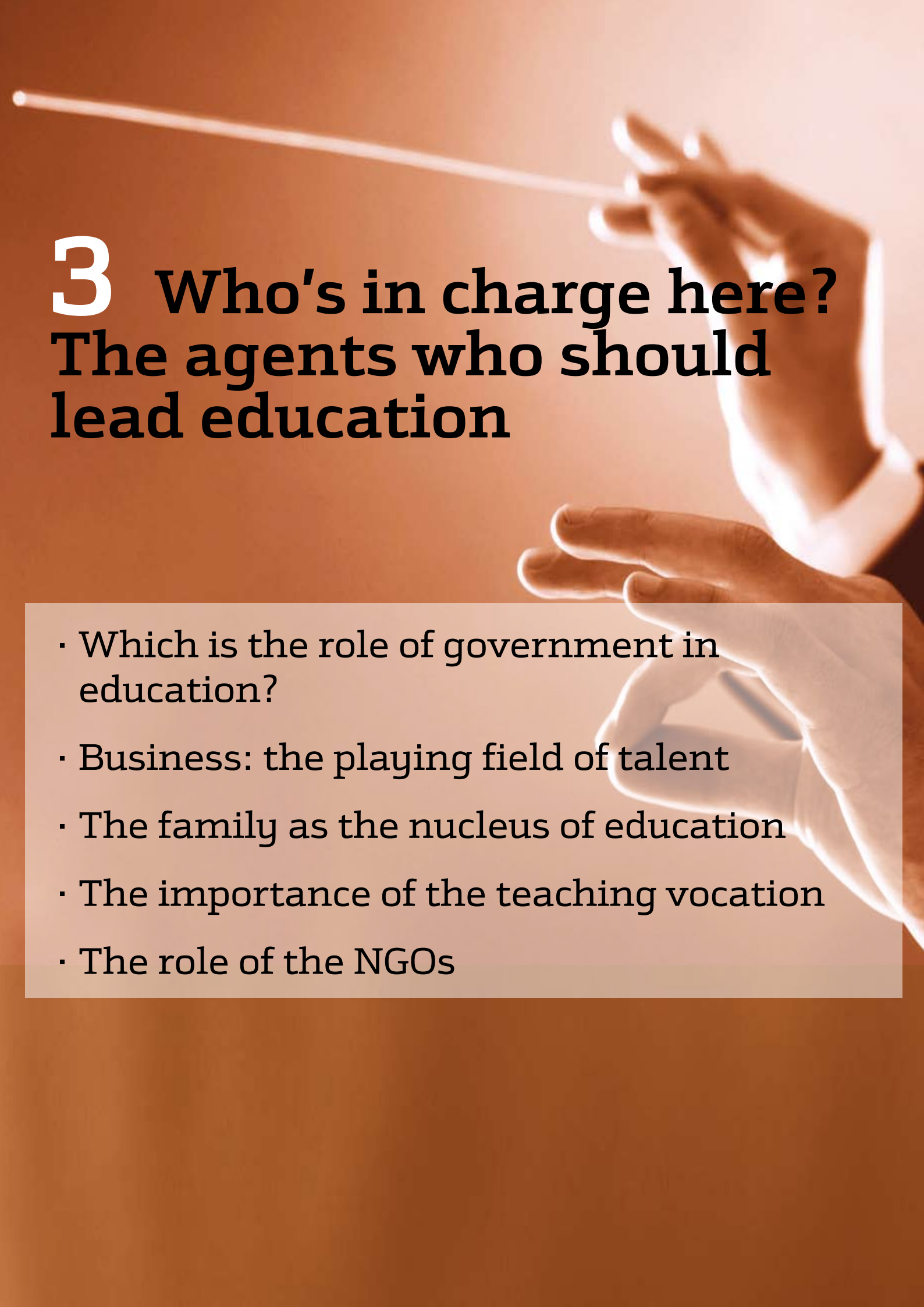
To make matters worse, the crisis of recent years has led to spending cuts in in education, especially in developing countries, with average investment for 2010 down on 2008 figures. Oxfam International places these budgetary cutbacks at 0.2% of GDP[13]. Here again, it is important to stress the urgency of implementing profound reforms to make education accessible throughout the world –by offering equal opportunities for all– and at the same time to train the future contributors to our society to develop the skills and abilities they need to compete and co-operate in a global economy. The necessary optimisation of investment in education can be achieved by bringing business management practices and indicators into academia.

Education is the new wealth of nations because an improvement in the education system has an economic value. In under a decade, Poland managed to improve the PISA performance ratings of 15-year olds by the equivalent of nearly one school year and halve performance differences between schools. A similar improvement among Spanish schoolchildren would be equivalent to another 40 billion additional dollars (around €30 BN) in national revenue[14]. This long-term economic value demonstrates that education is not a cost, but an investment.

[12] "World declaration on higher education for the twenty-first century: vision and action" and "Framework for priority action for change and development in higher education", UNESCO.

[13] "Los países pobres recortan el gasto de respuesta a la crisis demasiado pronto", Oxfam, 2010.

[14] "La educación no es gasto, es inversión", *El Pais.com* (April 2010) http://www.elpais.com/articulo/sociedad/educacion/gasto/inversion/elpepisoc/20100425elpepisoc_1/Tes.



3 Who's in charge here? The agents who should lead education

- Which is the role of government in education?
- Business: the playing field of talent
- The family as the nucleus of education
- The importance of the teaching vocation
- The role of the NGOs

Parents as the principal educators

The economic recession that has overtaken many parts of the world over the last decade, together with the popularisation of the middle class lifestyle, has led to a marked increase in the number of families in which both parents are working away from home. At the same time, older generations today tend to live more independent lives. Increasingly, children's education is being left in the hands of schools and extracurricular programmes, which still primarily employ twentieth-century models, based on rote-learning and written exams.

Although there has been much debate as to what twenty-first century education should look like, few schools or educational programmes have implemented the changes needed to prepare children for the challenges of life in this new future. As a result, a considerable gap has opened up between the skills young people have acquired at the end of their formal education and those they actually need to get by as adults. There is a very real danger that these kids will pay for our mistakes with their futures. For this very reason, parents must realise that they are the principal educators and that schools can no longer be expected to take all the responsibility for their children's education. The fact is that children spend less than 20% of their time in school.

Parents do about 50% of the looking after of their kids and can offer them a student-teacher ratio of two to one or even one to one; they are in a unique position to stimulate exploration, discovery and interest, and it is absolutely essential that they do so. However, they shouldn't do it on their own: it is important that they work in tandem with their children's teachers so they can guide the children in a way that best matches their style of learning and personality.

Parents also need to strike a balance between being parents and guides. They also need to attend to other important factors, such as creating an environment in which pupils can take risks "with a safety net", ensuring that they learn certain faculties and creating a relationship based on curiosity.

These might seem like strange ideas to parents whose education was based on the typical models of the early twentieth century; it might even prove challenging for them to understand, accept and then adequately create an environment that encourages and promotes curiosity.

The predominant authoritarian and vertical model of teaching needs to be replaced by one in which the adult is part parent, part teacher and part guide. Instead of being given the "right answer", children should receive advice in a continuous process of discovery; they should be capable of making their own decisions and learning from their mistakes.

Mistakes should not be avoided: they are a necessary part of exploring creatively.

Another key ingredient in the effectiveness of the educational experience is to use a learning environment in which young people can shine. Just as parents are the child's first teachers, the family home and its surroundings are the first environment where they can test out skills and knowledge in real life. It is important to create this space in tandem with the children to ensure they live the process as being their own and feel that they are in control.

Practical steps for parents to collaborate in their children's learning process

Challenge your children to design a space in the home where they can study, create, collaborate on projects and organise their working materials. Then help them to evaluate their designs in order to make sure they have included everything they need to meet their learning needs. Gradually make changes as you reassess what your children need to be as productive and creative as possible.

Kids are natural scientists. Encourage them when they experiment with everyday things around the house. Ask them to share their conclusions with you. The kitchen is an excellent place for experimenting in. Before starting, ask your child: what do you think is going to happen? Why is it going to happen? Then, check it over: what led to the result? What have we discovered? Using these exercises, you can foster their curiosity while at the same time creating the ideal environment for them to explore and develop.

Spend some time creating learning opportunities outside the home. Ask them to digitally document their district, a trip or anything they find interesting about society and nature. Encourage your kids to use photos to tell a story verbally, in writing or in a digital version.

Become a role model; share your lifelong learning experiences with them. Take them to the library or bookshop. Have them take part in our own efforts when you try out a new recipe, install a computer program or put together a piece of furniture. Look over the instructions together and talk about the new skills they have acquired.

Encourage them to teach you new skills, whether that involves using an application on your tablet or playing a game. Make sure your child doesn't feel that he or she is the only one who is still learning. We need to get across to them how important it is to learn relevant and necessary things for the future, and teach by example about finding, assessing and using information to achieve our aims.

Technology plays an important role in children's lives today; they are digital natives, never having known the world without the electronic tools we now use every day. Teach them to use them to obtain information, communicate with loved ones elsewhere, express themselves and express their creativity through artistic applications, photographs and videos.

Everyone now has the ability to design and publish beautiful and complex works of art and literature. Maybe you find the technology a bit beyond you, but take the opportunity to learn in tandem with your child. By teaching their parents, children are in turn learning something very important. Learn to feel comfortable with the idea that you don't know everything; be grateful for the gift your child gives you by allowing them to be the teacher and turning yourself into an independent student.

Thanks to these moments, children will learn as they go the skills they need to awaken their own passions and interest. Remember that education is not just a question of exams and grades; it's also a matter of exploring what the world has to offer, getting the most out of the journey of life.

Parents are the prime educators; we are responsible for our children's values, attitudes and passion for learning. We must be an example to follow, showing positive human characteristics and cultivating them and making sure our children maximise their potential. We must involve our children so that they know the most important thing of all: learning.

Patrick Newell
Founder and Director of 21 Foundation, Japan.

The World Bank considers improvement in global education to be vital because economic growth, improved development and a significant reduction in global poverty depend on the knowledge and skills that people learn, not on the number of years they spend in class[15]. This challenge must be on the agenda of all agents in society and requires effective collaboration from all, beginning with individuals, families and educational institutions, followed by businesses and finally government. Future Trends Forum experts say it is absurd that whereas mobile phones are upgraded every few months for the sake of technological progress, there is no similar commitment to education, which benefits all of society.

While all these agents have a role in education, teachers, governments and the family have the greatest influence in terms of their ability to influence future citizens (see Illustration 4).

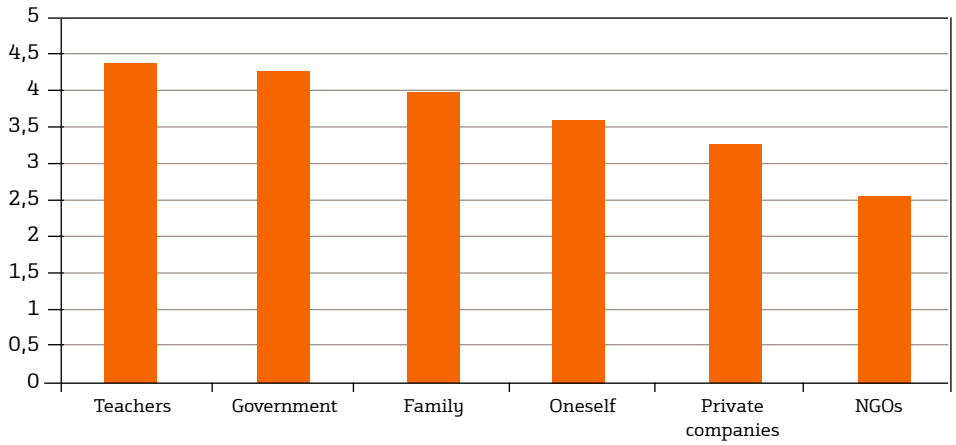


Illustration 4. Rank of the agents by their ability to influence the education of a country's populace.
Source: Authors.

We are now going to examine the role each agent needs to play to ensure the right to education is implemented in all strata of society.

3.1. The role of government in education

Milton Friedman, the American economist, said that a stable and democratic society is not possible without broad acceptance of a set of common values and without a minimum degree of literacy and knowledge among the majority of its citizens. Education contributes both of these, and its benefits are therefore not only individual, but have a positive impact on society as a whole.

Given that it is now classed as a public asset, it is hardly surprising to find that in most countries, education is now administered and funded by government. Traditional economic theory maintains that the *raison d'être* of state intervention in areas such as education is to satisfy more marginal needs (parents who cannot

[15] "World Bank Education Strategy 2020", World Bank.

Cuba	13,633
Lesotho	13,133
Timor-Leste	11,293
Republic of Moldova	8,237
Maldives	8,058
Swaziland	7,784
Denmark	7,752
Comoros	7,608
Iceland	7,569
Cyprus	7,409
Burundi	7,160
Tunisia	6,888
United Republic of Tanzania	6,828
Barbados	6,749
Sweden	6,737
Belgium	6,457
Cape Verde	6,447
Norway	6,443
Namibia	6,432
Vanuatu	6,437
Santa Lucia	6,254
Jamaica	6,168
Finland	6,134
Israel	5,919
Kyrgyzstan	5,913
Belize	5,749
Samoa	5,747
Latvia	5,684
Estonia	5,671
Ireland	5,622
Saudi Arabia	5,607
France	5,576
Morocco	5,560
Austria	5,462
Netherlands	5,462

United States of America	5,460
United Kingdom and Northern Ireland	5,421
Argentina	5,393
Switzerland	5,371
Viet Nam	5,318
Yemen	5,151
Senegal	5,099
South Africa	5,089
Hungary	5.085
Costa Rica	5,072
Lithuania	4,909
Portugal	4,892
Bhutan	4,805
Republic of Korea	4,803
Iran (Islamic Republic of)	4,785
Canada	4,772
Serbia	4,745
Dominica	4,728
Spain	4,616
Cote D'Ivoire	4,603
Italy	4,583
Bulgaria	4,435
Australia	4,433
Algeria	4,337
Malaysia	4,114
Russian Federation	4,087
Czech Republic	4,085
Benin	4,051
Chile	3,988
Colombia	3,935
Rwanda	3,867
Mali	3,823
Panama	3,800
Nepal	3,784
Uganda	3,766

Egypt	3,760
Thailand	3,753
Togo	3,752
Niger	3,694
El Salvador	3,627
Slovakia	3,593
Tajikistan	3,479
Japan	3,423
China (Hong Kong)	3,344
Mauritius	3,319
Guatemala	3,184
Andorra	3,163
Armenia	3,105
Sierra Leone	3,093
Bahrein	2,931
Pakistan	2,926
Georgia	2,920
Madagascar	2,907
Cameroon	2,905
Indonesia	2,819
Philippines	2,806
Liberia	2,773
Peru	2,678
Singapore	2,640
Guinea	2,439
Bangladesh	2,391
Lao People's Democratic Republic	2,266
China (Macao)	2,142
Liechtenstein	2,112
Lebanon	1,960
Azerbaijan	1,902
Zambia	1,370
Central African Republic	1,288
United Arab Emirates	0,987

Illustration 5: Total public expenditure on education as a percentage of GDP in 2008.
Source: Authors, based on UNESCO figures.

afford to pay for education, children with disabilities or learning issues, etc.), in defence of general social wellbeing.

The right to an education is closely associated with the birth of the welfare state. One of the demands of the 1848 French Revolution was instruction of the masses and a free and shared education for all — meaning state-funded education.

Since the 1980s practically all OECD Countries have significantly increased their spending on education

A right to education has been created and recognized by some jurisdictions: since 1952, Article 2 of the first Protocol to the European Convention on Human Rights obliges all signatory parties to guarantee the right to education. At world level, the United Nations' International Covenant on Economic, Social and Cultural Rights of 1966 guarantees this right under its Article 13[16]. In many countries, including Spain, education is a constitutional right, together with the right to work. However, this does not mean that it is prioritised to the same extent everywhere.

Public spending on education as a percentage of GDP can be used as a rough measure of the importance different countries place on learning and vocational training[17]. The first surprise is the country at the head of the list. It is neither some Nordic country nor South Korea (which, as we have seen, came second after Finland in PISA performance lists). No, the country that spends the most on education as a proportion of GDP is Cuba, closely followed by Lesotho, both at over 13%. In Europe, Denmark is the highest-ranked, at nearly 8%. Countries such as France, Austria, the US and the UK stand at around 5.4%. It is interesting to note the number of developing countries high up on the list: Vietnam, Yemen, Senegal and Rwanda. Paradoxically, Canada and Australia, countries that headed the PISA ranking, devote little over 4% of their GDP, the same figure as Spain.

We can draw two conclusions from this analysis. Firstly, there is no direct correlation between public spending on education and students' performance as measured by reports such as PISA. Secondly, amongst the developed countries, there are also many developing countries on the list.

Moreover, since the 1980s practically all OECD Countries have significantly increased their spending on education, in tandem with a series of initiatives geared towards distributing that cost more efficiently. However, only a small number of these countries actually manage to improve the performance of their education systems, and among the rest, the results are actually worse. This is because some obtain such a high rate of GDP that greater spending on education only leads to inefficiency and overpricing (see Illustrations 6 and 7).

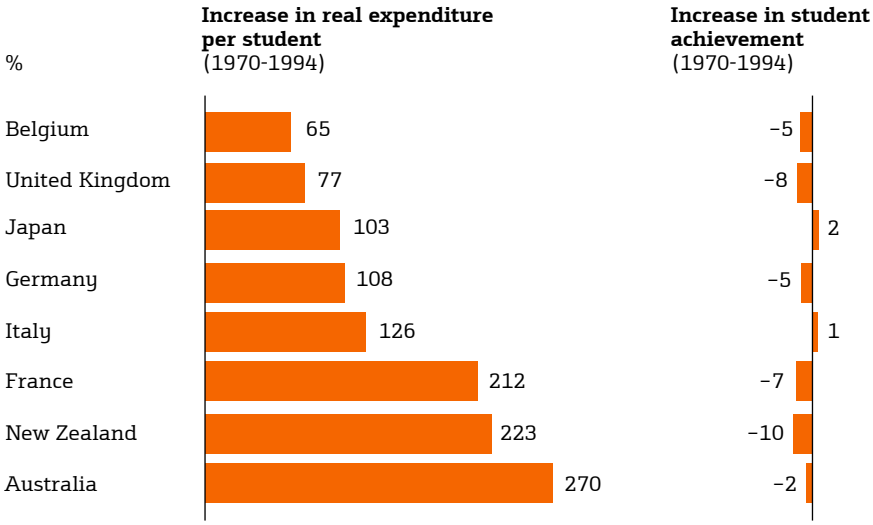


Illustration 6: Increase in spending per student vs. academic performance in OECD countries.
Source: How the World's Best-Performing School Systems Come Out On Top, McKinsey& Company (September 2007).

[16] "Education", *Wikipedia*.

[17] Conclusions drawn from data at http://stats.uis.unesco.org/unesco/TableViewer/tableView.aspx.

Milton Friedman proposed giving parents back the freedom to choose through a system of school vouchers that could be used as payment in private schools

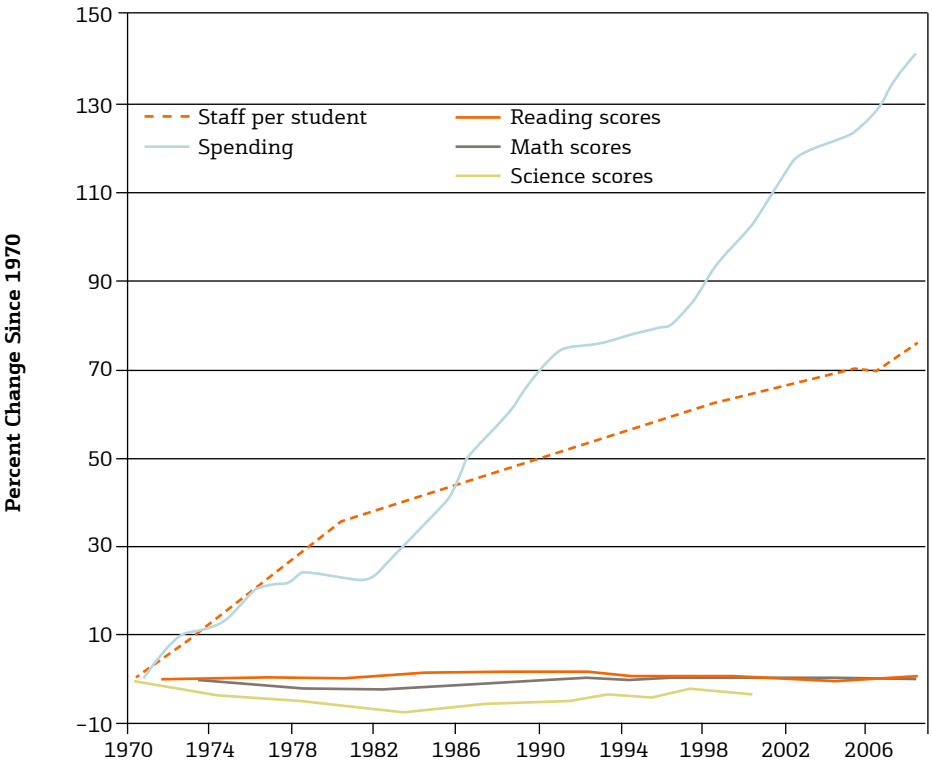


Illustration 7: Comparison of spending per pupil (adjusted for inflation), teacher-pupil ratio, and results of 17-year old students: percentage change since 1970.
Source: Cato Institute http://www.cato.org/pub_display.php?pub_id=10941.

Nonetheless, public spending is not generally enough to meet the educational needs of an entire population. Moreover, short cycles in politics with terms of office generally lasting less than five years, leads to short-term thinking that prevents greater incentives for investing on education. Although political parties often include reform in their political platforms, the necessary follow-up is often lacking because, at such a great remove, they will most likely never have to be accountable for the results of their policies. Further, we shall see the role government can (or must) play in education.

The eternal tug-of-war between public and private

Arch-liberal thinkers do not look favourably on state intervention in areas such as education, since it deprives parents of the freedom to decide for themselves on the education their children should receive. In his article "The Role of Government in Education", Milton Friedman proposed giving parents back the freedom to choose through a system of school vouchers that could be used as payment in private schools, instead of the public centres to which their children were allocated. In other words, it would allow schoolchildren and parents to choose the schools that best meet their needs. Friedman argued that the system would promote free competition among schools, be they public or private, creating incentives to improve and be more accountable. After lengthy investigation by his Foundation for Educational Choice, Friedman also argued that such a system would improve academic results in public schools, close the race gap, offer better services to students in special education and cut wastage of public school funds.

The debate on the role of government in education is likely to continue, but the different innovating initiatives that are taking place around the world appear to show that the need for change is beginning to be accepted

Opponents of the scheme, however, say that by coming into direct competition with private education, it would lead to a reduction in available funds and the number of pupils enrolled in public centres. They also argued that students who did not come from an advantaged religious or ethnic group, or those with some disability, would be concentrated in public schools, exacerbating differences between students.

Chile and Sweden implemented the system of school vouchers in 1981 and 1992, respectively. Per Unckel, governor of Stockholm and former Swedish Minister for Science and Education, said: Education is so important that you can't just leave it to one producer. We know from monopoly systems that they do not fulfil all wishes. [Kids] never ever have to stay in a school that's lousy. The right of the kid is to get a good education. If the public sector cannot offer it, he or she should have the right to go somewhere else"[18]. However, studies following implementation of the system in Chile show a major gulf between academic performance between public and private schools[19]. This is probably because it is very difficult to eliminate bias in the selection process: ideally, one should know whether a student placed randomly in a privately or publicly-run school, with the same spending on resources per pupil in both cases, would obtain better academic grades[20]. Nonetheless, in reality that spending is not uniform in the different schools.

The fact is that for a variety of reasons, the assumption that the state should be responsible for all aspects of education has come under attack in recent years. Firstly, its effectiveness has been called into question, partly because of the lack of competitive pressure. There are also doubts about its capacity to reduce social inequality. Finally, cuts in investment on education as a result of the present crisis have encouraged the search for alternative sources of financing.

The debate on the role of government in education is likely to continue, but the different innovating initiatives that are taking place around the world appear to show that the need for change is beginning to be accepted. Reforms are expected to come in three types. In the first, some or all of the functions of public schools will be subcontracted to the private sector, based on guidelines set by central or local government (examples include the Edison Schools in the USA and 3Es in the United Kingdom). In the second type, pupils would be allowed to leave public schools, normally those that are not working well and go to private schools with state-funded vouchers (as happens in the US, Chile, Colombia, Côte d'Ivoire, etc.). The third model will consist of publicly-funded private schools. Either existing private schools will be entitled to opt for public funding (as in the case of Denmark and the Netherlands), or new independent schools will be set up under public regulations, receiving public funding (e.g. the Charter Schools in the USA, Canada, China, and the City Academies in England and Scotland)[21].

For its part, the World Bank sees promotion of the private education system as a positive steps, offering the following benefits:

- It complements the limited capacity of governments as sole suppliers.
- It increases educational opportunities by providing an increased offer.
- It improves the orientation of public subsidies, since private financing can allow public resources to better target poorer sectors of society.
- It increases efficiency and innovation, since private management may be more efficient than public, and the competitive pressures increase the potential for innovation in education.

[18] "Should Obama look to Sweden's successful school voucher program?", Examiner.com, 2009.

[19] "Subsidising education: are school vouchers the solution?", International Initiative for Impact Evaluation 3ie, 2010.

[20] "Does Privatization Improve Education? The Case of Chile's National Voucher Plan".

[21] "The Changing Role of Government and Education", Answers.com.

That education and the future of our young people cannot be left exclusively in the hands of national governments: it is too great a responsibility to be left to one single agent

Once again, there are clear differences in the essence of the two options (public and private education) between developed and developing countries. In low-income countries, the surplus in demand makes it impossible for the state to meet the needs with its revenue. The World Bank therefore encourages agreements between the public and private sector. In developed countries, however, private education meets a more sophisticated demand that wants a differentiated education. In both cases, the government can give grants to those requiring education or hire private institutions to provide the services, thus providing parents with other choices. To do this, it is essential to have a regulatory framework that will ensure the quality and effectiveness of public resources.

Any educational initiative or reform comes at a cost and it is necessary to ask who is responsible for paying for increasing national standards of education? If politicians make decisions on our education system, should they not be consistent in their own personal actions? In other words, if they defend a state-funded education system, should their children not attend state schools? The press has been quick to react: "They are in charge of deciding on plans for state education and how the budgets for running it are to be distributed. Yet, [...] the majority of senior public figures in Spain opt for private schools. When it comes to finding a place for their own children, few go for state schools, giving the lie to the supposed quality they talk about at rallies and in other public speeches. How easy it is to decide on other people's children when the decisions affect others"[22].

If there is one conclusion we can draw, it is that education and the future of our young people cannot be left exclusively in the hands of national governments: it is too great a responsibility to be left to one single agent. These and other factors will be examined in Chapter 4, "Dreaming the Education of the Twenty-First Century: a decalogue of principles".

3.2. Business as the playing field of talent

The positive correlation between education and employment is well known. The greater the educational level, the greater the chance of finding work and of that work being better skilled and better paid. Or at least this has been the case till now. While the great majority of the world's population has welcomed globalisation with open arms, given the possibility it holds out of cutting distances, communicating within seconds and getting to know other cultures, we often fail to realise that we may be shooting ourselves in the foot. Geographical mobility and agreements between countries mean that it is becoming less and less common to "be born, live, work and die" in the same place. Moreover, the increasingly specialised labour force of emerging economies is making its way up the value chain. The result is an increase in competition, not only between people but also among the companies that have to find a way of attracting and retaining talent.

According to Accenture, "being competitive in today's global environment necessarily means occupying a leading position in talent generation and retention. Different countries and economies, although responding to this challenge to different extents, are beginning to compete in the global struggle to recruit the best professionals. Their success will depend on a range of factors, such as the prestige of their universities, the opportunities for research and the professional offer of their business sector"[23].

Traditionally, the people working in a firm were called the *workforce*. With the boom in human resource practices, the concept of *human capital* began to be used

[22] "Del British Council al Liceo Francés... Los políticos 'pasan' de llevar a sus hijos a la escuela pública", El Confidencial, 2010.

[23] *Talento para el Futuro*, Accenture (2007).

to remove the anonymity of the term and reflect the value employees have for a company. "Talent" is now the differential value par excellence and a firm's competitiveness is directly related to its capacity to attract, retain and develop it. Talent is important. The value of intangibles has gone from 20% of the value of the companies in the *Standard & Poor's 500* in 1980 to 70% today. We are in an age in which knowledge is the new capital, and knowledge is intangible. When the bases of an economy change, so too do those that control wealth. The advantage goes to organisations with the best talents and it is they that really have the power over an intangible around which firms are trying to build their management structure to generate wealth[24].

For this reason, active participation in improving education and training, inside and outside the confines of the company itself, is ever more important for firms' competitiveness.

Importance of continuous in-house training

[24] http://www.fundacionbankinter.org/system/documents/8161/original/XI_Competir_en_tiempo_de_cirsis.pdf.

Today, a company that has no educational curriculum runs the risk of being left behind. Indeed, when it comes to recruiting talent, continuous training is one of the most important attractions a company can offer. Ensuring this training means

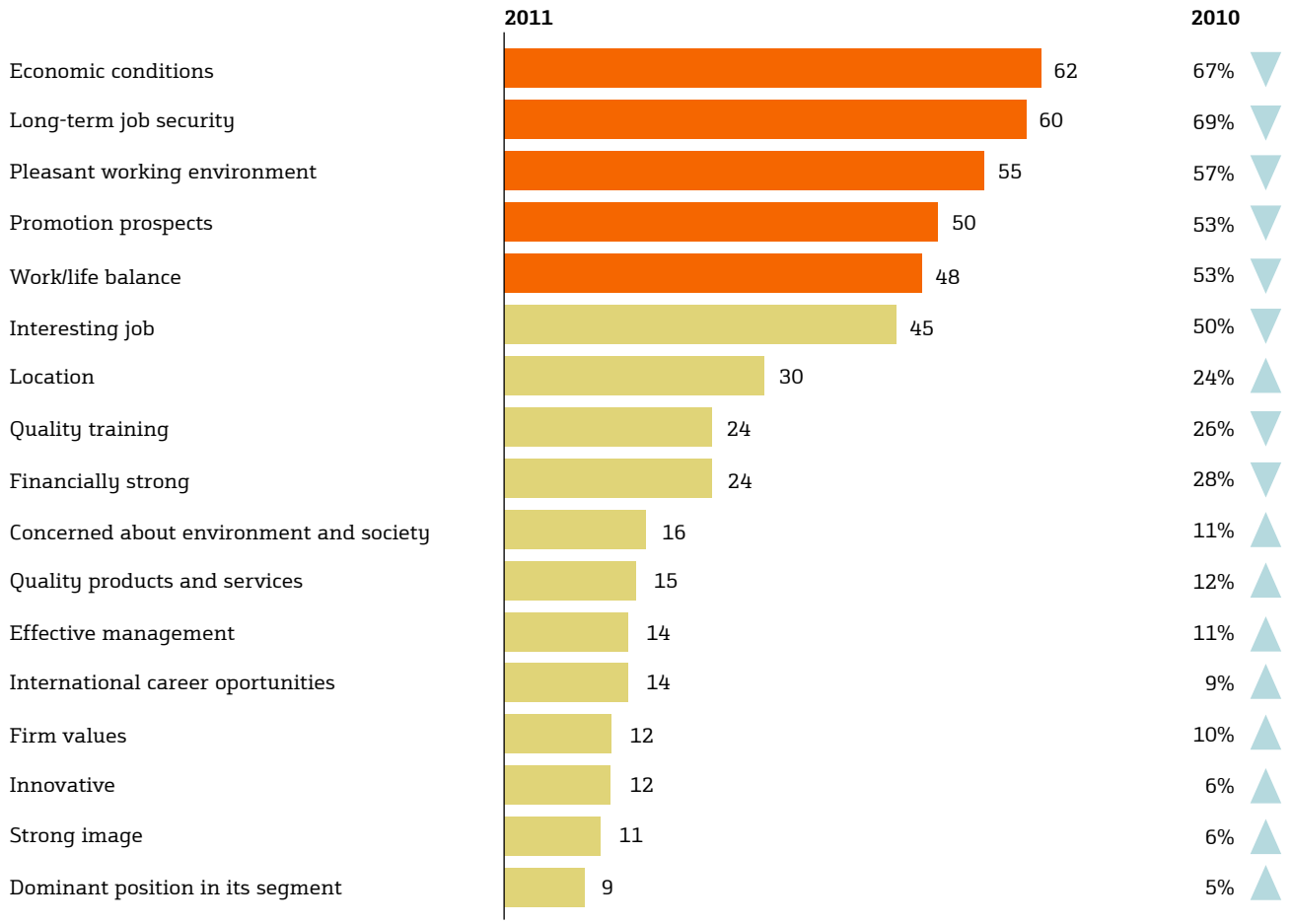


Illustration 8: Aspects considered important when deciding to work for a specific company.
Source: "II Informe 'Employer Branding', *Newsletter Asociación Española de Dirección y Desarrollo de Personas* (March 2011). Survey of 7,000 people, with and without work, aged between 18 and 65, of both sexes, from all educational levels and all autonomous communities of Spain.

There are several other benefits of continuous in-house training; However, not all companies are quite as convinced of the returns on investment in training

giving employees an opportunity to continue growing professionally; even if it is not a priority, it is still valued when it comes to looking for employment (see Illustration 8). Moreover, it improves the company's perspectives of including amongst its ranks people who are capable of responding to such a changeable environment and to come up with better results. Accenture's research shows that managers running high-performing companies are those that consider talent-oriented strategies to be the first priority when it comes to maintaining greater efficiency of their businesses[25].

As well as this greater capacity to attract talent, there are several other benefits of continuous in-house training, including improvements in productivity and working environment, motivation and adaptation to technological or legal changes. However, not all companies are quite as convinced of the returns on investment in training. In Spain, for example, only 22.6% of wage earners in the private sector participated in training activities organised by their companies in 2010[26]. The good news is that the average was slightly higher in other countries in the EU-15[27] at 34%. This bucks a fifteen-year trend in which the proportion of employees benefitting from company-funded training had remained unchanged[28].

Building an educational offer is no mean feat. It is a task that requires reassessing objectives, education and contents based on specific knowledge and competences within the framework of a based on knowledge, the production factor of the twenty-first century (see Illustration 9). In general, it is necessary to proactively boost people's capacity for understanding and using information, teamwork and problem-solving, and, at the same time, their knowledge in fields such as science, engineering and ICT. There is also an ever greater demand for skills to

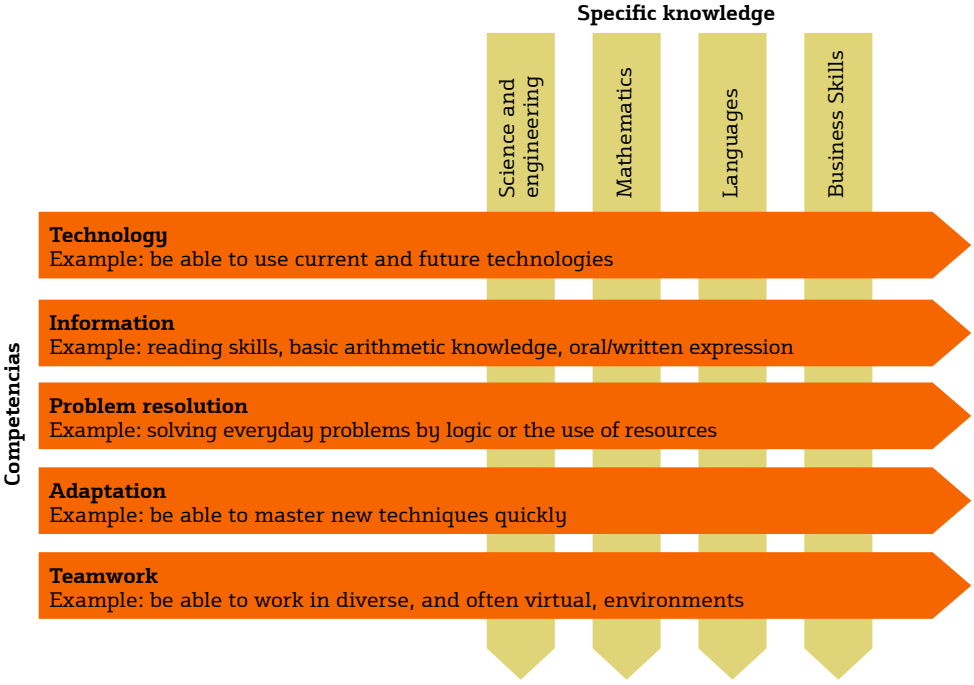


Illustration 9: A knowledge-based economy demands a combination of instrumental skills and specific knowledge.
Source: *Ocúpate, Ocúpale. Una llamada a la acción a individuos, empresas y administraciones para afrontar el reto del empleo en España* (Accenture, November 2011).

[25] Leveraging Talent Starts at the Top, Accenture 2007 http://www.accenture.com/SiteCollectionDocuments/PDF/HBR1LeveragingTalentJan08Final.pdf.

[26] http://aenoadigital.com/index.php?option=com_content&view=article&id=184:nuevos-datos-en-formacion-continua&catid=18:empresas&Itemid=9.

[27] Pre-enlargement member states of the European Union: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden and the United Kingdom.

[28] The 5th European Working Conditions Survey 2010 http://www.eurofound.europa.eu/surveys/ewcs/2010/training.htm.

In Europe, not enough effort is being made to reinforce the continuity between education and work until it is too late

complement ICT and contribute added value to the simple use of information and communications technology[29].

The rapid incorporation and evolution of technologies within companies will undoubtedly boost the demand for continuous training among organisations to grow their employees' capacities.

The need to seek out these profiles often leads companies to look beyond their own borders. It has even become a priority in the political agenda of many countries. In March 2011, the government of Chancellor Angela Merkel approved a bill intended to facilitate recognition of the education and qualifications of non-national professionals in order to allow them to employ their knowledge in Germany[30]. There are estimated to be 300,000 immigrants living in Germany who are not entitled to work because their professional qualifications or degrees from foreign institutions are not recognised. At the same time, the country is suffering a severe shortage of skilled labour (around 400,000 engineers, masters craftspeople and skilled workers are needed), and it was therefore only a question of time before the law was changed to adapt to a globalised world.

In August 2010 Spain announced that it would probably have to import professionals to work in the area of the Internet, and agreements were signed with countries such as India with work permits being issued to satisfy this growing need in the business world[31]. Looking at Accenture's list of sectors with high future growth potential in Europe, we can see that all of them –including IT– depend to a great extent on knowledge: aerospace, audio-visual industry, aviation, ecological economy, biotechnology and robotics, among others[32].

And, from outside, are companies capable of leading the necessary renovation of the education system to adapt it to the production sphere?

We started by talking about the important role companies need to play in the educational field if the necessary talent is to be attracted and retained. We have already talked about the training schemes many companies have set up to ensure continuous training of their employees. Unfortunately, firms are not doing enough to promote their human capital from outside the corporate confines, i.e., before the person actually becomes an employee. This is especially relevant in developing countries, where state coffers may be inadequate to ensure education of the population.

Are pupils really being prepared to be employable in companies in the knowledge-intensive industries we have just been looking at? It depends. In Europe, not enough effort is being made to reinforce the continuity between education and work until it is too late. Governments prefer to implement legal measures rather than addressing the root of the problem in the universities. In contrast, the Americans have seen that it is better to get in early rather than apply a cure afterwards. Their excellent universities provide the innovation and research society needs.

However, the USA suffers from a mismatch between the academic level attained and the profile actually required in some jobs. Although there is a match between the academic curriculum and the posts required, simply not enough people complete university. A report from the Georgetown University Center on Education and the Workforce warns that in 2018, there will be 22 million jobs for new

[29] http://www.accenture.ma/SiteCollectionDocuments/Local_Spain/PDF/Competenciasparaelfuturo.pdf.

[30] http://azstarnet.com/laestrella/ciudad/article_9e03bdc8-559b-11e0-b7aa-001cc4c03286.html.

[31] http://www.cincodias.com/articulo/economia/espana-tendra-importar-profesionales-internet/20100823cdscdieco_6/.

[32] *Talento para el Futuro*, Accenture (2007).

Many of today's university degrees are geared towards the same career opportunities, resulting in a devaluation

employees with university degrees while at the same time, there will be an estimated shortfall of 7.7 million workers with higher education[33]. Together with an acute narrowing of the population pyramid at that age, this will make it necessary to recruit qualified students from elsewhere. 80% of people preparing their PhDs in the US are non-nationals[34].

Diego Sánchez de León, head of Accenture's Talent & Organization Performance Unit for Europe, Africa, the Middle East and Latin America and Future Trends Forum expert, says that Spain also has a shortage of people with higher education which is difficult to overcome: although there is a very higher rate of immigration, there is not the level of skilled immigrant population that is required[35]. Moreover, Spain is experiencing a paradigm shift with people no longer occupying a "lifelong" post in a company, as was previously the case[36]. Far from being seen as a "problem case", someone who changes job several times throughout their professional career is viewed positively, and these changes are seen as a sign of adaptability and a multi-faceted approach. As a result, people are having to face up to the need to reinvent themselves constantly, something they were not taught to do in their university education. In Europe there is a lot of learning by rote, but little understanding.

To make matters worse, many of today's university degrees are geared towards the same career opportunities, resulting in a devaluation. Even postgraduates appear to be seeing a period of saturation... What will be the next level to be created to allow people to differentiate in the world of employment? The Effective Education for Employment (EEE) initiative says that there is an intensification in "the global skills race" which allows people to have more than one skill, and greater capacity to learn than to retain stale knowledge. Nonetheless, there is a great disparity between what our education systems teach and what businesses need.

Part of the problem lies at the doorway between academia and the business world, i.e., the recruitment and selection processes, which require mechanisms to assess the candidates' skills. For example, one of the most sought-after characteristics among employers at present is capacity for team work. However, very few employers can effectively assess this capacity in a work interview[37].

If long hours of overly-theoretical study at European universities are no longer preparing young people for their future careers and recruitment processes are not capable of detecting talent, can companies do anything to remedy the fact that these young people are coming to their workforces without the necessary skills? Clearly, firms must get more involved in educating their future employees. However, does it make sense for this involvement to be limited to university education, or can companies do something to ensure that secondary-school students are more "employable"? In Chapter 4 we shall explore various initiatives that companies can take. The common denominator is that they all view education as an investment that can prove very profitable insofar as it improves competitiveness and flexibility in the company.

3.3. The Family: the nucleus where it all begins

The first environment in which children start to develop is the family. From a very early age, much of their learning comes from imitating their parents. Albeit unconsciously, parents' behaviour will have the most direct and lasting impact on

[33] http://www.insidehighered.com/news/2010/06/15/jobs.

[34] *Talento: plantar hoy para responder al reto de mañana*, Accenture (2008).

[35] *Talento: plantar hoy para responder al reto de mañana*, Accenture (2008).

[36] "Por qué su trabajo se queda viejo", *Expansión & Empleo* (July 2011).

[37] http://www.eee-edexcel.com/xstandard/docs/FINAL%20-%20Educacion%20Efectiva%20para%20el%20Empleo.pdf.

According to the PISA report, 50% of children's educational performance can be put down to the family's social position

a child's education. Various studies have even shown that when parents get involved in their children's education, they get better grades, score better in tests, have a lower school absenteeism and drop-out rate, have higher aspirations and have a more positive attitude to school[38].

However, our current educational panorama is a long way from this ideal image. Rather than laying the foundations for collaboration, it tends to distribute responsibilities in a syndrome that might be called "the school is responsible for my child during school hours". In general, there are no monitoring mechanisms outside the two regulation meetings a year and situations in which parents ask to see the teachers because "something is going wrong". There have also been a series of social changes that have made it even more complicated for parents to play a fundamental role in the education of their children, placing greater emphasis on schools and other social agents (such as the media). It is therefore vitally important to buck the trend by fostering closer relations between school and family.

Major changes and transformations have taken place in both families and schools. The family has become more nuclear and more urban; there has been a sharp increase in the number of single-parent families; the number of hours spent on family recreation has increased; children are starting school earlier and most importantly of all, there has been a major increase in the number of women joining the workforce. Until a few decades ago, the family unit consisted of the father, who worked outside the home to earn a living and support all the members of the family, and the mother, who took care of the home and the children's upbringing. With more women joining the workforce, due to changes in consumption habits, the championing of women's rights and the appearance of more temporary employment, families have been restructured.

For the first time in history, there are more women than men at university, and higher education has further extended their career possibilities. Men have therefore had to take on roles and tasks which —generally speaking— they would not previously have considered. Indeed, in many countries the law is encouraging men to become more involved in the home scene with paternity leave, a reduction in working hours and extended leaves of absence. However, this transition still needs some tweaking to ensure that both parents are properly involved. According to the Institute of Assessment and Quality, which is dependent on the Spanish Ministry of Education, only 2.3% of parents take an active involvement in their children's learning process[39]. According to the institution, families take an optimistic view of the educational situation, partly as a way of "washing their hands" of their children's education and swathe themselves in the notion of an idyllic, relatively problem-free, school system.

The role of the family is essential to school success. Educational research shows that in a family with a child who is successful at school, the parents are role models for learning; learning is encouraged at home; clear borders are established and family routines support school success.

There appears to be a direct link between this type of behaviour and the family's socio-economic position. According to the PISA report, 50% of children's educational performance can be put down to the family's social position, 18% to the socio-economic composition of the families of pupils at the school and 6% to the educational and organisational characteristics of the schools themselves. The

[38] http://www.familyimpactseminars.org/fia_nlarticle_v4i2.pdf.

[39] http://www.consumer.es/web/es/educacion/2003/10/14/66523.php.

The worse the family situation, the worse the child's academic performance and subsequent financial situation, which will continue to feed the vicious circle in future generations

remaining 26% is unexplained. These data are irrefutable proof that education systems are not meeting their goal of reducing social differences. And it is a vicious circle: the worse the family situation, the worse the child's academic performance and subsequent financial situation, which will continue to feed the vicious circle in future generations.

If this is the case, why has the debate on the crisis in education traditionally centred on judging the role of the state, schools or teachers in education, practically ignoring families and other factors, such as socio-economic status? Who is responsible for giving parents basic guidelines on how they should be focusing their children's education? Is ethical education in values the responsibility of the parents or the school? These are difficult questions and often tend to be pushed to the back burner in the social debate.

Increasing concern among parents

Fortunately, the creation of associations such as the National Coalition for Parent Involvement in Education in America and blogs such as "Padres por la Educación" ("Parents for Education") with links to most of the education ministries of South and Central America, demonstrate that there is a growing and healthy concern among parents in the system in which their children are being educated. In Spain, the Universidad de Padres (University of Parents) de Jose Antonio Marina is an educational project to collaborate with parents throughout the entire education process of their children, "to respond to the feeling many parents have that they stand alone with their educational responsibilities and of being overwhelmed by the complexity of the situation"[40]. Some of the most frequent causes for concern include the low quality of teaching in state schools, a lack of resources to attend to more underprivileged children and children with disabilities, school drop-out rates and the prohibitive cost of university education, as is the case in the USA.

To deal with some of these problems, relatively widespread movements have emerged in countries such as Australia, Canada, New Zealand, Britain and the US advocating home schooling for children (See Illustration 10). In America, the proportion of children of school age being educated at home increased from 1.7% in 1999 to 2.9% in 2007. As we have already seen, the reasons generally lie in a conviction that the system does not fulfil the child's academic needs or the fact that the parents simply do not agree with the ideologies or methodologies being practised. They believe families can take care of educating their children themselves, arguing that they have done so for thousands of years and can continue to do so in an industrialised modern society – and better than schools. In contrast, in other countries such as Germany, Greece, Sweden, Cuba and Turkey, as well as being illegal it may be socially unacceptable.

In Finland the model is legal, but uncommon. Part of the advantage of enrolling children in the country's public primary education system is that they get free books, food and healthcare. In Spain the law is unclear on the subject. Article 27 of the Constitution recognises freedom of education and the parents' right to choose their children's religious and moral education, but contains no further regulations on the subject. Many parents can be reported for school absenteeism and even child neglect, but they are never prosecuted, since they are not evading their obligation to educate their children; they are simply providing it in an alternative way.

[40] http://www.universidaddepadres.es/.

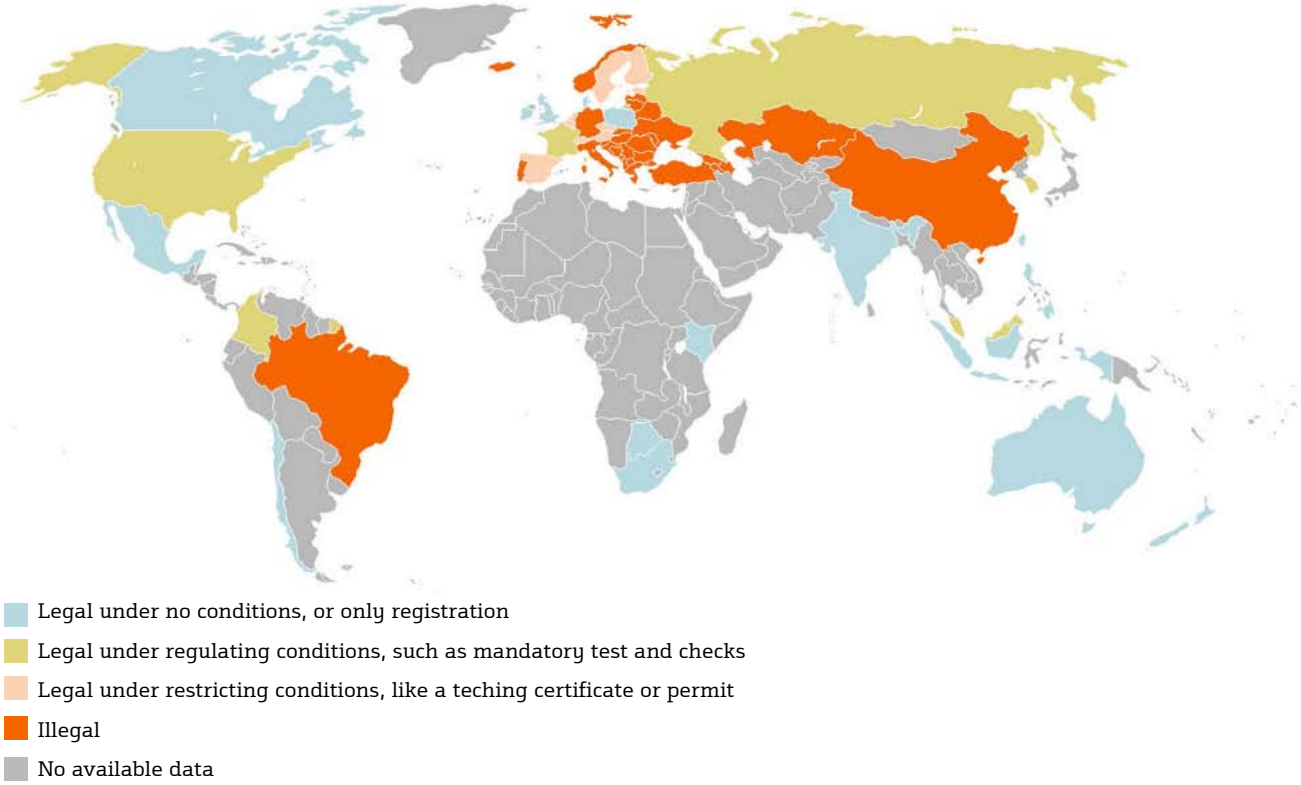


Illustration 10: Home schooling around the world.
Source: http://en.wikipedia.org/wiki/Homeschooling_international_status_and_statistics.
(*For the United States and Switzerland legal status varies by state, color by most occurring).

It is interesting to note that, at least in the US, these home-schooled children outperform average students in the formal education system. However, these figures should be treated with some caution, given that home schooling tends to take place in families with a higher educational level; it would be interesting, therefore, to compare such children with their counterparts in the formal education system[41]. The fact that their parents have great faith in their own ability as educators must necessarily have a very positive effect on the children's educational performance.

Whatever about this movement, society seems to be quite positive that the family has an important role to play in transmitting values. While it is true that this area of value-transmission used to be viewed as the almost exclusive responsibility of families, it is now seen as a task that parents share with schools. Parents still make their traditional contributions to their children's formal education, of course, such as helping with homework, giving them lessons and cultivating the habit of reading aloud. There are also other less obvious but nonetheless important contributions, such as taking children to the theatre and acting as educators, giving the children the guidance and accompaniment they need.

Should parents have the freedom to choose their children's education?

A particularly heated debates at this time centres on whether parents should have greater freedom to choose the school their children attend. Some countries

[41] *La familia española ante la educación de sus hijos*, Fundación La Caixa (2001).

In Spain, the criteria used for allocating places are based on proximity, income level and the presence of siblings in the centre

have seen a decline in the quality of state schools because they have only the same resources –or fewer– to cater to a growing population of pupils. This is exacerbated by an influx of immigrants who arrive in their new host countries with serious academic deficits and in some cases are not even able to speak the language.

One of the risks of this freedom of choice is that it encourages separation between pupils. In the benchmark case, the Finnish system, there is no choice; all children attend their local district school. Moreover, pupils with difficulties are attended to the same as advanced children. Finnish parents also have a culture of reading with children in the home and they have regular contacts with their children's teachers[42]. Nonetheless, the experts say that the Finnish situation is not comparable to that of other countries for one simple reason: The rate of immigration and socio-economic stratification is higher, which means that Finnish education does not have to cope with obstacles such as teaching a non-native language for immigrant students.

Another way of increasing families' capacity for choice has been to extend it within the state system. In other words, each family is neither allowed to choose freely nor forced to choose between a very small number of schools (the ones closest to home). Instead they can choose from amongst a much larger number. This is the measure most widely adopted by educational authorities in most countries, because it involves less of a break with the pre-existing model. It is also the way of increasing freedom of choice that has aroused least opposition in the educational community[43].

In Spain, the proposals for choice within the state system have been far less radical. The criteria used for allocating places are based on proximity, income level and the presence of siblings in the centre. In theory this allows families to choose, retaining a fair criterion that does not lead to school's cherry-picking their pupils. In practice, the choice is limited to state schools in the area in which the family lives. If parents want to send their children to a popular school in another area, the application will almost certainly be turned down. So the family place of residence is still the decisive factor conditioning the type of school children can attend.

The controversy has been quick to appear: should parents be given the right to choose or should measures be avoided that only serve to widen the gap between students with different academic levels? Unfortunately, there is no magic recipe for all. The construction of an efficient education system is determined by each country's political, economic and social circumstances. The most that can be done is to examine some of the best practices others have used to increase parents' involvement in their children's education. For example, we shall see how Joel Klein, CEO of the education division and executive vice-president of the office of the chairman of News Corporation in the USA and a Future Trends Forum expert, developed when he was New York City School Chancellor a ground-breaking system that gave parents back the authority to decide on their children's education.

Finally, take note: if you are one of those who think that there is no point trying to control children's education because they spend most of their time out of the home... you're wrong: School-age children spend 70% of their waking time (including weekends and holidays) out of school[44].

[42] http://news.bbc.co.uk/2/hi/programmes/world_news_america/8601207.stm.

[43] *La familia española ante la educación de sus hijos,* Fundación La Caixa (2001).

[44] http://www.michigan.gov/documents/Final_Parent_Involvement_Fact_Sheet_14732_7.pdf.

Some experts warn that the importance being placed on the way teachers motivate students can be counterproductive

3.4. The Individual: self-actualisation as a person

"The first duty of an education is to stir up life, but leave it free to develop",
Maria Montessori.

A person's self-actualisation is the result of a feeling of satisfaction with themselves at having managed to achieve what they set out to do. In his hierarchy of human needs, Abraham Maslow (1908-1970) placed self-actualisation at the apex of the pyramid. At the base of Maslow's hierarchy come the "basic" or "physiological" needs, which include all the bodily functions that allow us to live: food, breathing, excretion, rest and sleep. The second level, "safety and protection needs" encompasses everything from physical safety and health to issues related to the family and employment. The third level of needs, entitled "love and belonging" comprises psychological needs such as friendship and intimacy. The fourth level, the "esteem", includes success and status, either through one's own perception (self-esteem) or the respect of others. And at the top of the pyramid is the "need for self-actualisation", which is achieved when one attains sufficient knowledge of oneself and knows what one wants from life. Clearly, an individual cannot attain this state until he or she has scaled all the other tiers, one by one.

The presumption underpinning the title of this chapter, that education represents an individual's self-actualisation as a person is a more idealistic vision, which associates education with vocation. It is therefore more common to place education on the fourth tier, where people choose to receive an education as a way of improving their self-esteem, advancing their career or receiving the recognition and respect of others. However, in the current climate, education appears to have fallen back to Level 2, Safety, because the economic recession has placed people on the alert and created a feeling of general insecurity. Now, more than ever before, the education system must set itself the aim —and not just the means— of ensuring that students take responsibility for their own education and learn how to scale the pyramid. Nonetheless, some experts warn that the importance being placed on the way teachers motivate students can be counterproductive, given that students may choose to blame a lack of such encouragement for their underachievement.

The Future Trends Forum experts consider that in the twenty-first century, personalised education should trigger a paradigm shift in which the concept of "teaching" by the teacher evolves into one of "proactive learning" by the pupil.

As well as these moves up and down Maslow's pyramid, what else is happening to definitively change the relationship between the individual and his or her education? José María Gasalla, lecturer in human resources at ESADE, predicts that "within five or ten years all industries will be controlled by four or five "super-firms". The rest will be sole traders, freelancers or micro-enterprises"[45]. This all forms part of a new paradigm in which individuals develop their own brand and "manufacture" their employability, rather than working for a company that assures them of a pay packet each month. Hence the importance of the individual not only being responsible for threading one job (or employment project) to the next (this phenomenon of a labour economy based on a succession of jobs is known by the experts as *giganomics*), but also for creating his or her own educational curriculum to adapt to changing market needs.

If individuals have to start to take responsibility for their own education, the contents and form of teaching must also be adapted accordingly. As we noted at

[45] http://www.expansion.com/accesible/2011/07/15/empleomercado-laboral/1310747476.html.

It is estimated that in classes with the best teachers, students learn twice as fast as in classes with 'average' teachers

the start of this publication, the Industrial Revolution marked a historical moment when a model of mass education was needed to achieve greater literacy amongst the population. Today, with individuals accessing greater and greater quantities of education of higher and higher quality, there is an increasing trend towards offering more personalised learning experiences. As we shall see in next chapter, it is possible to use software to reach more individuals on a massive scale, following the educational model of the Industrial Revolution, with the one difference that new technologies make it possible to create customised lessons for every pupil. Ultimately, each individuals makes different mistakes, and therefore needs to be taught differently.

Yet is it really helpful for individuals to be responsible for their own education? Authors such as Jean-Claude Michéa think not. In his book *L'Enseignement de l'ignorance (The Teaching of Ignorance)*, he argues that the economic system will not be able to absorb a mass of highly skilled citizens. In other words, quality schooling is necessary, but only for a small few. He claims that the fact that the education system is not working is a conscious political decision, since the powers-that-be prefer a system of natural selection in which the few extraordinary individuals that are required emerge from a mediocre education system[46]. Obviously, this is a somewhat extreme view, but he has a valid point with regard to the inefficiency involved in having a large over-qualified majority.

Immanuel Kant, who was a very innovative university professor, breaking with traditional methods, said: "Man can only become a man by education. He is merely what education makes of him". As the Future Trends Forum experts say, we must hope that education can perform a critical function in society, enabling individuals to increase their levels of skill, thought, and creativity, in order to help them compete and co-operate in a global economy. This is why it is so important for individuals to seize control and take responsibility for their own education.

3.5. The teaching vocation

"O Captain! My Captain!",
The Dead Poets Society.

After parents, teachers are the authority figures with whom children most interact. The evidence suggests that teacher quality is a decisive factor behind learning differences between one pupil and another[47]. Before trying to improve textbooks, saturate classrooms with computers and Internet connections or reduce pupil-to-teacher ratios, it seems that the most important possible improvement in the educational process is having "good" teachers. Joel Klein, says that "good teachers make good schools"[48].

It is estimated that in classes with the best teachers, students learn twice as fast as in classes with 'average' teachers. In other words, the best teachers' pupils take six months to learn things that pupils of average teachers take a year to. The gap is even wider in the case of the pupils of the least effective teachers, who may take up to two years to achieve the same level, regardless of their home background or behavioural issues[49]. So it's better for your child to be studying in a "bad" school with an excellent teacher than in an excellent school with a "bad" teacher. It brings to mind Sidney Poitier's character in *To Sir, With Love*.

[46] http://www.nodo50.org/tortuga/Jean-Claude-Michea-La-escuela-de.

[47] How the World's Best-Performing School Systems Come Out On Top, McKinsey & Company (September 2007).

[48] http://parentadvocates.org/nicecontent/dsp_printable.cfm?articleID=1803.

[49] "Most Likely to Succeed", *The New Yorker* (December 2008).

The list of prerequisites for being considered a good teacher grows even longer in a world with information at our fingertips

According to some experts, the negative impact of underperforming teachers is severe and even sometimes irreparable, particularly in the early years of schooling (see Illustration 11).

So why is the education of future professionals placed in the hands of people who are not up to the task? More than ever before, becoming a teacher is a matter of choice; after all, there are many other outlets for a degree in education. Maybe a degree is not enough to work as a teacher. Something else is needed: passion, dedication, teaching skills, empathy, emotional intelligence and a true vocation for transmitting knowledge and values. It is precisely that vocation to provide better quality teaching that makes people good teachers, trainers and educators. A teacher who feels motivated and self-actualised probably tackles the current challenges in teaching more effectively.

The list of prerequisites for being considered a good teacher grows even longer in a world with information at our fingertips. It can be quite complicated to keep one's knowledge up to date. And today's teachers need to accept and adapt to an imminent change in their function. As we have already seen, the move towards personalization, collaboration and an explosion in the use of new technologies in teaching will have a decisive impact on the role played by teachers. Instead of learning specific contents by rote, students will have to "learn to learn" and the teacher will no longer be the transmitter of knowledge and will become a "facilitator" in the learning process. He or she will have to provide personalised feedback as often as is needed for pupils to learn.

In this context, ensuring that teachers have the knowledge, skills and capacity to offer an optimum teaching quality is no easy task. In USA and many other countries, teachers come on average from the third of university graduates with

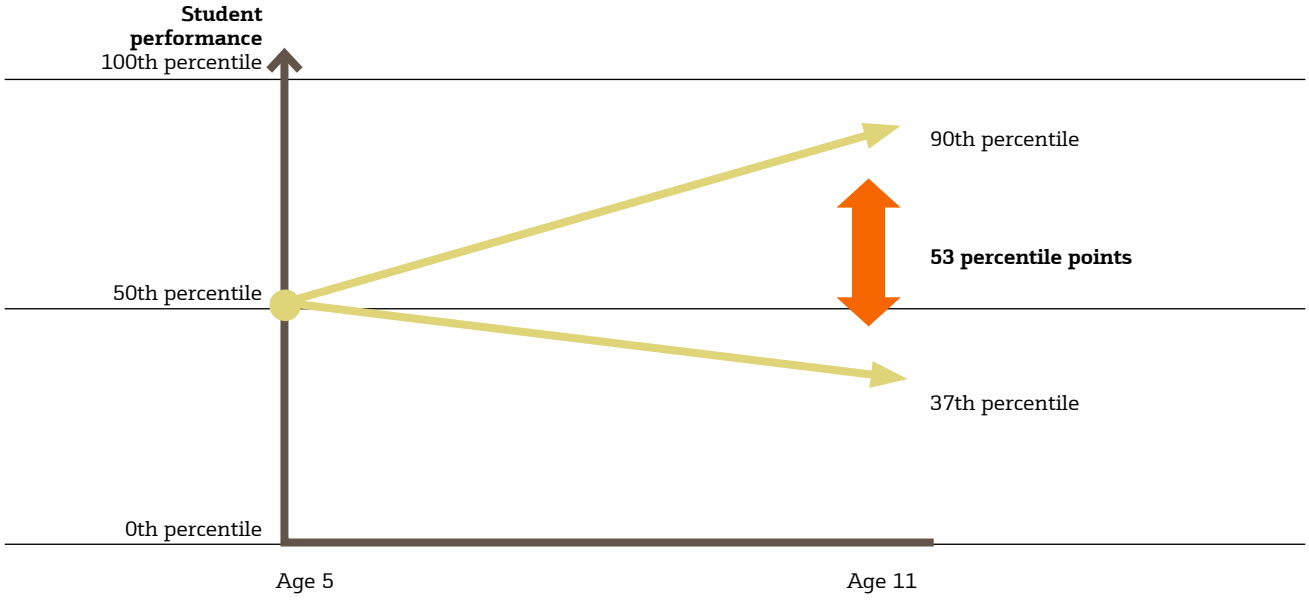


Illustration 11: The Effect of Teaching Quality.
Source: *How the World's Best-Performing School Systems Come Out On Top,* McKinsey & Company (September 2007).

the lowest qualifications. In contrast, South Korea recruits primary teachers from the top 5% of graduates, and Singapore and Hong Kong from the top 30%[50].

Given that countries are investing more and more in education in order to meet the challenges of a globalised economy, can this investment be translated into more qualified teaching staff to offer optimum teaching quality? Countries with the highest teaching quality, as well as selecting the best teachers, provide plenty of practical training for new recruits and encourage lifelong education for all.

Bill Gates, chairman of Microsoft and co-founder of the Bill & Melinda Gates Foundation, advocates placing more pupils in the classes of teachers who get the best academic results, in return for economic incentives[51]. As a result, schools would reduce costs by having fewer teachers, but would guarantee their competence. The savings could be ploughed back into further improving teachers' performance. MBA classes at Harvard have a total of ninety students, yet it is consistently ranked among the best universities in the world. Nonetheless, many parents' associations are not happy with this idea of saturating the classrooms, however good the teacher may be (see Illustration 12). They reject the idea that cost-cutting should drive long-term strategies in the terrain of education. The professionals themselves do not like the idea of motivation via financial reward. Some want to see something more closely associated with public recognition. Is it possible that our society may at last give people who devote themselves to teaching the status and recognition they deserve? Lee Iacocca is one of the most representative figures in the late twentieth- and early twenty-first-century automotive industry and was responsible for the creation of the Ford Mustang and

[50] http://www.uco.es/hbarra/Master/Conclusiones_del_informe_MCKINSEY.pdf.

[51] http://www.good.is/post/can-we-improve-education-by-increasing-class-size/.

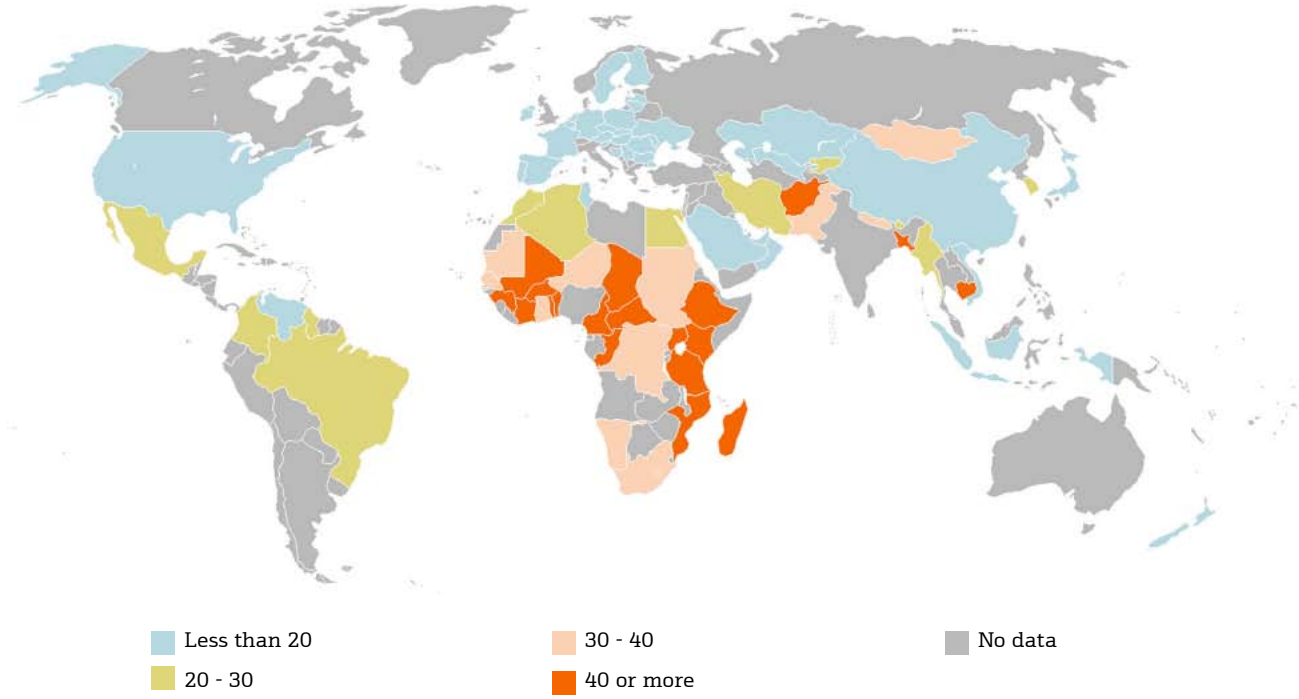


Illustration 12: Teacher-pupil ratio in primary school.
Source: World Bank.

the Chrysler Minivan. As he rightly says: "In a completely rational society, the best of us would aspire to be teachers and the rest of us would have to settle for less, because passing civilization along from one generation to the next ought to be the highest honor and highest responsibility anyone could have".

3.6. The NGOs: when others fail in the attempt

Education systems in developing countries are poorly managed, often politically influenced, have a high rate of teacher absenteeism (often because of AIDS), and a level of corruption that prevents the necessary funds and resources getting through. Problems in the area of education are not exclusive to developing countries. Schools in developed countries suffer from overcrowding and security issues; lack of parental participation in children's education; difficulty in integrating immigrant children; a lack of motivated teachers; teaching of insufficient quality or poorly suited to the needs of the labour market and global competition (see the Twelfth Publication of the Bankinter Foundation of Innovation, *Social Innovation: Reinventing Sustainable Development*).

Despite the fact that great advances have been made in many countries thanks to social innovation, it is quite unlikely that the UN's millennium development goal for education (to achieve universal primary education) will be met. Nonetheless, the results to date are not unimpressive: Rates of primary schooling continue to rise and by 2008 stood at 89% in developing countries[52]. Between 1999 and 2008, school enrolment in Sub-Saharan Africa increased by 18%, in Southern Asia by 11%, and in North Africa by 8%. However, there is still much work to be done to ensure that all countries come closer to meeting the Millennium Goals on education.

Did you know that...[53]

- One out of every four adults in the developing world –i.e. 872 million people– is illiterate. Of these, two thirds are women.
- More than 100 million children do not attend school.
- 46% of girls in the world's poorest countries have no access to education.
- Children who have completed primary education have half the chance of contracting HIV as those who have not. Universal primary education would prevent 700,000 cases of HIV per year, approximately 30% of new infections in this age group.

[52] http://www.beta.undp.org/undp/en/home/mdgoverview/mdg_goals/mdg2/where_do_we_stand.html.

[53] Figures from Oxfam UK, United Nations Population Fund, ActionAid.

The "Quaternary Sector" has the difficult task of continuing to promote child schooling and creating better educational institutions

This will require a two-pronged attack, addressing access to education from an early age on the one hand and the quality of the system on the other. However, we have already seen that there is not the same commitment to improving education as there is in other areas. The most state-of the-art innovations always have applications in the technological terrain and have a clear business objective. Our education systems, in contrast, have remained unchanged for over a century. The reason is that education, especially in developing countries, is not a sufficiently attractive market in which to devote time and effort implementing advances or applying innovations to make it more accessible, effective and affordable.

Nonetheless, innovation can have two very positive effects on education. On the one hand, it can make it possible to reach out to children who do not have access to basic education, because they live in rural and remote areas, or simply because their country does not have the resources to provide it. For example, the Internet can be used to provide educational material prepared by the world's best teachers and professors. Computer applications also facilitate personalised education for specific groups. And innovation can foster an innovative spirit among the students themselves, kick-starting a virtuous circle by contributing to the training of entrepreneurs and leaders of the future[54]. At the end of the day, the idea is that any improvement should be sustainable in terms of its long-term benefits.

This is where non-government organisations come in. When other sectors and agents lack the incentives to meet a demand that is necessary, but unprofitable in economic terms, these organisations can address shortfalls that would otherwise go unattended. Over recent years, many of the resources for development in different sectors have been channelled through NGOs. This has also been the case in education. International donors are increasingly using international and local NGOs to provide educational services to the population.

NGOs not only focus on social inclusion programmes. They also play a basic role in driving reform of education systems, working individually and in networks, in political dialogue, and they are creating new spaces to enable the civilian population to get involved in education. Within the framework of its "Education for All" initiative, UNESCO stresses the vital role played by NGOs in promoting high-quality universal and egalitarian education. They include organisations such as Teach for America, Junior Achievement, and the Fundación Tomillo in Spain.

Moreover, the social sector is changing with the emergence of a so-called "Quaternary Sector" which adopts structures from the business world and uses business practises but applies them to a social purpose, without depending on monetary contributions to get by. Achieving this requires large doses of innovation, and the "Quaternary Sector" has found the way to apply business models successfully to offer more efficient and sustainable solutions to social problems such as education.

These business models allow cost reduction, growing specialisation and co-operation between agents from different sectors, as well as making it possible to target specific segments of the population and exploit economies of scale. Nonetheless, this "Quaternary Sector" has the difficult task of continuing to promote child schooling and creating better educational institutions. This means finding incentives for families to send their children to school; improving the employment prospects of young people who decide to study higher education;

[53] See Twelfth Publication of the Future Trends Forum, *Social Innovation: Reinventing Sustainable Development*.

Skills to Succeed

Accenture's star programme in the field of international solidarity education is Skills to Succeed, whose aim is to equip over 250,000 people around the world with the skills to get a job or build a business before 2015. The plan involves training people from all countries to allow them to participate in the economy and in society, thus contributing to their progress. Over the next three years, the multinational and all its foundations will contribute over $100m to supporting the company's social commitment activities in the form of local and international donations and disinterested contributions from the staff in the company, who will dedicate part of their time and share their capacities.

reinforcing the ecosystem of collaboration between private and public agents in order to source a greater quantity of financial resources and making use of information and communication technology to disseminate education amongst a wider public and revolutionise the way in which people are offered education. Above all, they must continue learning from successful and easily replicable and scalable best practices.

In short, NGOs are not intended to substitute the work of government or other international organisations, but to cater to areas lacking social or economic policies or to deal with specific social groups. In Chapter 3, we will look at some of the initiatives taken to relieve the education system both in developed and developing countries.

4 Dreaming up twenty-first century education: a decalogue of principles

- A universal, democratic and inspirational education
- Lifelong learning and entrepreneurial vision to educate the citizens of the twenty-first century
- Innovative methods and collaborative education

Higher Education in the twenty-first century: key principles

The problem

How come we launch new models of mobile phone every few months and better cars every year, yet our education system can't be said to have improved in several decades? The same question is valid in nearly every country in the world.

I believe there is a simple answer: we recognise that manufacturing mobile phones, cars and buildings involves establishing a formal profession related to the body of knowledge in question and an synergic skills ecosystem. We have experts who understand the electronics behind our mobile screens and their design; indeed, a whole army of researchers and technologists are working, for example, to create more efficient wireless modules... to make them 10% smaller and lighter than the present ones!

If we did the same thing in the field of education, there would be plenty of organisations every country investigating how children learn to read in their mother tongue; how they understand scientific concepts; what impact class size has on learning and where children go wrong when they learn to resolve linear equations. And yet we don't. And that's why we have better mobile phones every few months while education continues to languish decade after decade.

Not only can this situation change; it is our duty to change it if we want our children to have a better future. And the solution, in my opinion, does not lie in some philosophical approach, like "decentralise" or "centralise" or "delegate more to teachers", or even "more" or "fewer" "tests", but in very systematically creating and encouraging a "science of learning" that generates a corpus of knowledge.

The science of learning

One persistent myth in education says that teaching children isn't rocket science; we have all the answers and we just lack the political will... or the teachers are inefficient... or there is a specific administrative fault behind the failure of our education systems. The fact is that there is probably nobody in the contemporary world who knows how to solve our educational problems. Admitting that this is the case is an important step.

Let's take a simple example: all children need to learn what decimal numbers are. This is why we have hundreds of thousands of texts or chapters of books explaining decimals. At the same time, though, every teacher needs information on how to teach the subject. He or she needs to know what difficulties children face in understanding decimal concepts, and what solutions and strategies work best for resolving those

difficulties with different types of children. It would therefore be reasonable to presume that there would be thousands of texts available on those subjects. Yet, anywhere in the world, a teacher will find it hard to find a single text to read going into a class on decimals!

Learning Science would be an interdisciplinary field, with elements taken from education, psychology, cognitive science, computer science, artificial intelligence and neuroscience. Specifically, it would study the false ideas students have about different concepts, and what strategies work best for addressing them. It would try to come up with answers to questions related to the difficulties students have with reading and define useful strategies for overcoming them. It would go into theory, but it would also be firmly grounded in practice.

Our school system

It has been argued that the social institution most akin to school (with its uniform and timetables) is prison. Learning by rote, the emphasis on certain skills –often at the expense of others– the pointlessness of formal education, qualifications and grades —these are all problems in the lives of millions of students and affect education in the majority of societies. Ironically, the goal of education is to arouse passions, cultivate each student's talents and help everyone to be capable of discovering them.

I believe that evaluations of results (that show what children learn and even what the teachers know) are important. Nonetheless, the evaluation must be well designed and its impact limited. A low-impact assessment means that the actions taken as a result must support and centre on improvement, not punishment. Such evaluations would help clearly highlight the educational challenges: a prerequisite for devoting the necessary energy to solving them.

The need for a new syllabus

The world has been changed by forces such as globalisation and technology. The education of the future must be prepared for a different world. Skills such as collaboration and awareness of different cultures (something that has not been sufficiently stressed in current curricula) should be taken into account. Customised learning must cease to be a trendy catch-phrase and become something that enables each student to discover and develop their own talent.

Customised learning means that students will not be grouped or taught in classes formed only by age group, but will instead promote and develop individual interests. An elementary, core curriculum would consist of certain familiar subjects —language, mathematics and science— and certain aspects that are neglected in traditional classrooms, such as creativity and the arts, and other new aspects (such as entrepreneurial thought) which should also be part of the core curriculum.

Once students complete the compulsory classes, they could go on to study the subjects of their choice. One student could learn more about fractions, another about the pyramids of Egypt and another about coral reefs. This will all become possible when technology is really used to make learning exciting. Artificial Intelligence will use data from millions of students to help children to learn as efficiently as possible with the methods that best suit them. Since there are two scales of learning (one involving the millions of students who need to receive a quality education and another that exists only in the mind of each child) individuality can only flourish when the immensity of learning is available to every child, whenever they choose.

The future of learning

If we manage to achieve this, the schools of the future will be very different and much more fascinating and interesting than today's. Students will spend an important part of their time interacting with smart devices that will help them learn on an individual basis, at their own pace and in their own way. But this does not mean that there will be less individual interaction.

In the remaining time, children will interact with other children guided by an adult. This "teacher" will be very different to today's: he or she will be an expert in identifying and maximising the pupils' potential. In this session, the children will tell each other, excitedly, what they have learnt. The adult will introduce them to experts who will also be excited at the prospect of meeting intelligent children with an interest and talent in their own speciality. Children would learn social skills, such as giving and receiving comments, accepting failure and working in a team —all critical skills for which today's schools often do not have time.

If we can put in the hard work needed today, then we can fulfil the promise of a complete education that helps each person to contribute to society and occupy their rightful position.

Sridhar Rajagopalan
Managing Director and Founding Director of Educational Initiatives (EI), India.

Having briefly looked at the current situation of world education and the various agents involved in leading education, we have seen that in developed and developing countries alike, a profound reform of the field of education is urgently needed. This reform will affect not only academic education, as a passport to the labour market; it must begin from the earliest childhood and extend right through our lives. Learning is a vital issue that accompanies us every day and all related agents must be involved in its reform.

Education should be prioritised in the political agenda. Companies need to see the educational curriculum of their employees as being a real asset for the business. Parents, for their part, should actively seek the help they need in the difficult task of raising their children and give them the time they deserve, while teachers must receive social recognition for their dedication to educating the professionals of the future. And, when all else fails, non-governmental organisations (traditional or more innovating in their structures) must be on hand to address social needs that the market does not find attractive.

Despite the great inequalities between rich and poor countries, they share a commitment to improving quality through cooperation amongst all. In this task, the participation of international bodies will continue to be essential. This commitment is all the greater in poorer countries, since for historical, cultural, political and economic reasons, educational reforms are so complex that to date they are not coming up with the anticipated results.

In its desire to contribute to this goal, the Future Trends Forum has decided to set out a list of areas in which we can act to encourage a more advanced community, with the instrument of education for promoting future economic growth. In creating this decalogue, we have drawn on a series of best practices that have been successful in some communities or education systems and that may constitute a starting point for others.

Principle 1. Universal, global and priority education for all nations: utopia or reality?

> "A man educated at the expense of much labour and time [...]
> may be compared to one of those expensive machines",
> Adam Smith (*The Wealth of Nations*, 1776).

Education plays an essential role in the economic and social development of any country. The more educated an individual is, the greater his or her contribution to society will be. Education is recognised as a right by most countries which stress the importance of learning at all stages of life channelled through high-quality education systems.

To do this, education must first and foremost be universal. The most important global initiative in this area is UNESCO's "Education for All" programme, the goals of which are: universal primary education, adult literacy, gender equality and quality education, early childhood care and education, and meeting the basic education needs of young people and adults. At the beginning of this publication, we raised the complicated issue of what is being done to assure education as a basic universal right. While great advances have been made

under the UN umbrella to "achieve universal primary education", the indications are that this goal will not be achieved by the target year of 2015. However, on a positive note, we are now going to analyse those areas in which success has been achieved to date, enabling low-income countries to raise primary education enrolment to 80% and school primary completion rate to 60% (see Illustration 13). As a result, countries such as Vietnam have managed to halve poverty levels, while Mozambique has seen a major fall in infant and maternal mortality[55].

One of the priorities for developing countries is to offer incentives to families to school their children — especially girls, who often suffer discrimination. What inducements can be given to low-income families who tend to prioritise other more basic areas, such as food and health? School fees can be reduced or done away with altogether. In countries such as Uganda, Tanzania and Bangladesh, this measure has led to the enrolment of millions of extra children; in some

[55] *Human Development Report 2007/2008,* UN Development Programme (UNPD).

Illustration 13: Progress towards universal access to education.
Source: *Learning for All: Investing in People's Knowledge and Skills to Promote Development,* World Bank Group Education Strategy 2020 (April 2011).

It is necessary to take advantage of new information and communication technologies to establish knowledge networks between countries

cases the number of children at school has even doubled. Even so, there is still strong resistance among many parents, given that children at school cannot work to contribute to the family economy. UNICEF estimates that globally there are 250 million children in employment between the ages of 5 and 14[56], not to mention those performing domestic work, involved in armed conflicts or living rough.

Economic or health incentives can also be offered that are conditional on the children attending school. Organisations such as Progresa (Mexico) and Food for Education (Bangladesh), offer payment in cash and food respectively to encourage regular school attendance. Programmes also need to be set up to target specific groups that do not receive the same attention as others. These include girls, pupils with disabilities and children from countries at war. UNICEF and the World Food Programme have worked together to run large-scale campaigns such as Back-To-Peace and Back-To- School in a wide variety of post-conflict situations, including Afghanistan, Angola, Liberia and Sierra Leone[57].

Secondly, education must be global. Quite simply, this is because we indisputably live in a globalised and interconnected world. How can society and individuals be trained to adapt to the challenges of a changing environment? It is necessary to take advantage of new information and communication technologies to establish knowledge networks between countries that will contribute to distributing knowledge, learning languages, encouraging geographical mobility and even improving international diplomatic relations.

Global networks such as the Global Education Network and the International Education and Resource Network (the latter based in Spain) offer an opportunity to pool best practices in education so that anyone interested can learn from other successful cases. There are also infinite ways of accessing educational contents from anywhere in the world: lectures or tutorials by videoconference or webcam, YouTube, teachers' and pupils' blogs and social networks such as Facebook and Linkedin.

Working Examples is an example of an *on-line* portal that stresses the design of learning experiences and offers opportunities for researchers and designers to connect and collaborate. Over time, clusters of practical examples build up around shared themes of education, creating a community of learning that feeds off the cooperation between teachers, parents, pupils and opinion leaders.

UNESCO insists that this globalisation of education should be made compatible with the cultural roots of each country. It states that all persons have the right to express themselves and to create and disseminate their work in the language of their choice and particularly in their mother tongue; all persons are entitled to quality education and training that fully respect their cultural identity; and all persons have the right to participate in the cultural life of their choice and conduct their own cultural practices, subject to respect for human rights and fundamental freedoms[58].

Thirdly, education must be a priority and have a central role in the political agenda. In many cases, communities do not commit enough to educating future generations. Making improvements in educational institutions, to make them more effective and more accessible, is the unfinished business that is required if the commitment to equal opportunities is to be met and the society is not to lose

[56] *Beyond Child Labour: Affirming Rights*, UNICEF (March 2001).

[57] "Toward Universal Primary Education: investments, incentives, and institutions, Achieving the Millenium Goals", 2005.

[58] http://www.un.org/es/events/culturaldiversityday/.

its competitive position vis-à-vis other countries. The amount a country spends on education in comparison to health or defence can, for example –together with other factors– be a useful indicator of its priorities (see Illustration 14). Note that some countries, such as Thailand, Morocco and Mexico make major sacrifices by investing in education. Public spending on primary education is one of the most effective weapons in any government's arsenal for combatting poverty.

A national commitment is required to enable a legal and institutional framework to be developed to support education as one of the essential pillars of progress. However, more education on its own is no longer enough, as the early versions of human capital theory maintained; it is also necessary to assure the quality of the education[59]. Finland is a good example to follow, with entirely free education system and backing from the state, which invests heavily in the necessary resources. As we saw in the first chapter, the proportion of GDP spent by each

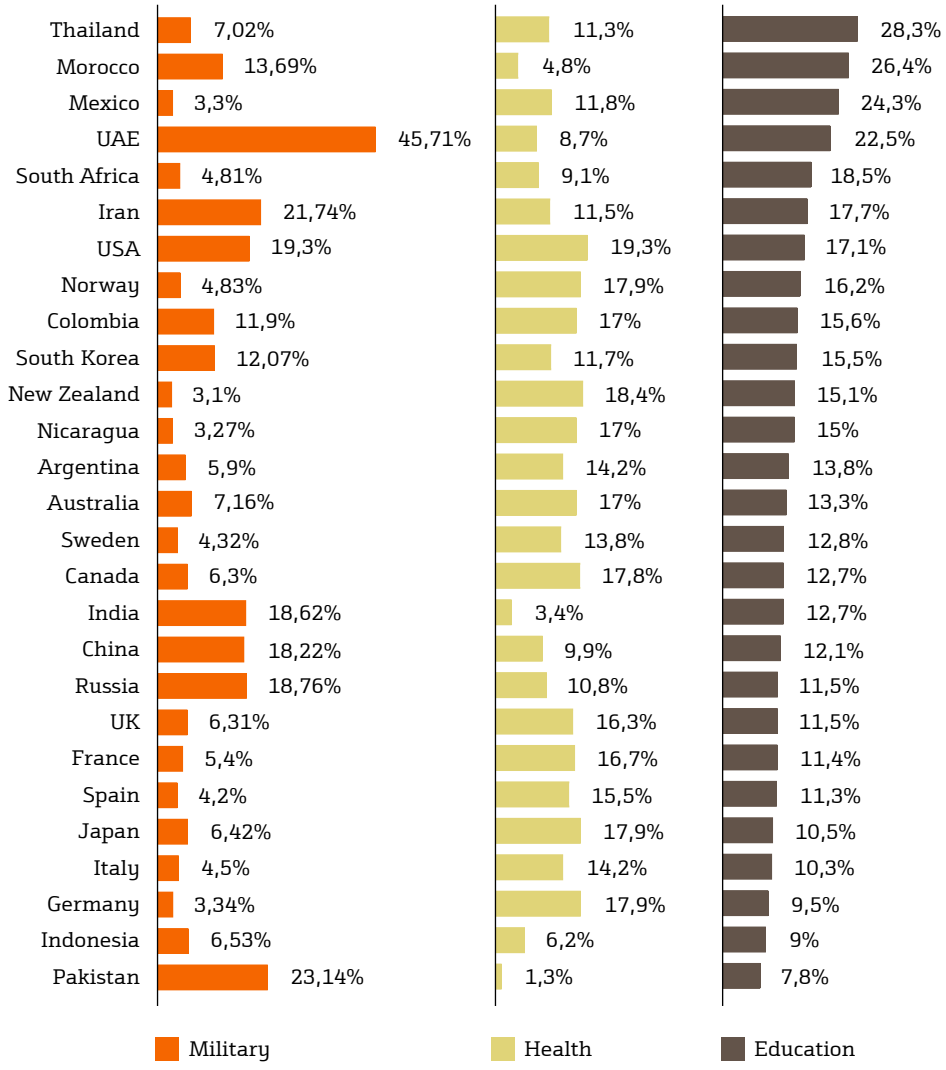


Illustration 14: How countries spend their money.
Source: http://www.visualeconomics.com/how-countries-spend-their-money/

[59] *La familia española ante la educación de sus hijos*, Fundación La Caixa (2001).

The more universal, global and prioritised education is, the more it will contribute to a country's economic growth, allowing it to face up to the challenges of the twenty-first century more effectively

country in this area must be increased, and not only in higher education. The temptation to rein in expenses, optimise resources and try to weather the financial storm should not be an excuse for not implementing policies for improving education systems; if a government can lay the foundations for knowledge by designing and supporting a competitive education system, it will already have gone some way to getting the country out of the recession.

In short, the more universal, global and prioritised education is, the more it will contribute to a country's economic growth, allowing it to face up to the challenges of the twenty-first century more effectively. Emerging countries, such as China or India, have learnt the lesson. Their education strategy, according to Diego Sánchez de León, "will lead to a transfer of investment to these countries". He regrets that in Europe the drive to learn is being lost[60]. We must hope that more countries will understand the importance of education for competing in a global environment.

Principle 2. The democratisation of education[61]

The Future Trends Forum experts stress the need for education to help level the playing field. Given that we are not all born into the same social, economic and political circumstances, education offers us an opportunity to get ahead and reduce the differences that divide us, individually and as countries. In developing countries, education is a gateway to a small and exclusive club. In the context of advanced capitalism, education is the key for accessing both employment and property; and in the information and knowledge society, it is also a powerful mechanism of integration.

Many parents with limited resources are capable of sacrificing much of their income so that their children can have a good education, in the hope that they will have better career options. It seems only fair that there should be equal opportunities; this does not mean that everyone achieves their goals, but that they have the same opportunities to do so. Nonetheless, there are some limitations.

In order to understand the constraints on democratising education and removing obstacles such as social class, race or nationality, it may be useful to look at the example of the dichotomy between private universities in the USA and public universities in Spain. There is a tradition in America of parents opening a savings account for their children's future education the moment they are born. Nonetheless, even eighteen years without raiding the piggy bank is not generally enough to pay for enrolment fees, tuition fees, upkeep and university books.

Although there are many financing options and scholarships, young people inevitably graduate with a substantial debt burden on their shoulders. There is also the option of going to public or "community" universities, which are significantly cheaper, especially for people resident in the same state. However, there is a very deep-rooted culture of choosing universities on the basis of their prestige or specialisation in a given field and this forces many students to attend college in another state.

At the other extreme, universities in Spain are practically free. There are private universities of recognised prestige, but some are simply the "Plan B" for pupils who do not get a good enough grade to get into a state university. The

[60] http://archivo.expansionyempleo.com/2008/01/02/mercado_laboral/1072904.html.

[61] Bell, 1976; Drucker, 1993; Castells, 1997.

When a student drops out of university, everyone –the student, the university and society in general– loses out

low cost of public university education in Spain (less than $1,000 *a year* as compared to over $35,000 in private American colleges) has enabled a large proportion of Spanish young people to go to college; however it also contributes to overcrowding and to lengthening the time students take to graduate. Indeed, in Spain university students take over seven years to finish technical degrees when they are actually designed to be 3 to 4 years in length[62]. There is no significant financial penalty for taking longer to complete a degree. Moreover, grants are awarded on the basis of economic criteria, such as coming from a large family, instead of rewarding the pupils' academic record. A system of incentives needs to be introduced, in other words, one based on students' effort and performance.

The university drop-out rate also gives some idea of what is happening. In Spain, the figure is rising: one out of every three students abandons his course before finishing. Only 44% of Spanish students graduate. It is to be hoped that now that Spain has joined in the Bologna process[63], it will begin to come into line with other countries, where a larger proportion of university students complete their studies (75% in the Nordic Countries, Belgium and France and 90% in Britain)[64]. The experts put the drop-out rate down to a number of factors: undergraduates not having the necessary skills to complete the degree successfully; the lack of a culture of hard work; and the fact that many students enrol in courses they are not interested in — either out of a lack of vocation or because they do not have the grades they need to get into their first choice. Obviously, it is reasonable to assume that the low cost of university studies may be a factor here: students are less afraid of throwing away the investment made so far in their education.

As in Spain, the drop-out rate is also a cause for concern in American universities. Only 56% of students who begin a bachelor's degree ultimately graduate[65]. Although the high cost is an important factor, a large percentage of students abandon the degree because it does not live up to their expectations and they suffer a lack of motivation or academic preparation to cope with the course[66].

Blame the students or the system? Whatever the reason, when a student drops out of university, everyone –the student, the university and society in general– loses out. Universities need to have better retention plans and ways of detecting talent, regardless of the students' economic resources, so that they can successfully complete college.

As we mentioned at the beginning of this chapter, quality education should not be conditioned by socio-economic limitations and there should be equal opportunities for the great majority. This goal appears to have been achieved by University of the People, the first on-line academic institution in the world without enrolment fees, which advocates the democratisation of higher education. The success of this global low-cost and high-quality educational model derives from its use of Internet to cut costs and the backing it has received from respected academics. Distance learning is a growing trend that allows students the freedom to choose where they study and for how long, as well as cutting the cost. The model is based on collaboration between students who share resources, exchange ideas and discuss different subjects each week, creating a sense of community. UNESCO considers it to be essential for guaranteeing equal access to new technologies at all levels of the teaching system[67]. However, the emergence of a new gulf between the "info-rich" and the "info-poor" forces us to be realistic

[62] http://www.levante-emv.com/secciones/noticia.jsp?pRef=3811_19_405814__Comunitat-Valenciana-universitarios-tardan-siete-terminar-carreras-tecnicas.

[63] The Bologna process is an agreement signed in 1999 by the ministers of education of a number of European countries. It began a process of college convergence intended to facilitate graduate exchange and adapt curricular contents to social demands, improving quality and competitiveness through greater transparency.

[64] http://www.elmundo.es/suplementos/campus/2008/528/1225306857.html.

[65] http://www.thefiscaltimes.com/Articles/2010/10/28/High-College-Dropout-Rate-Threatens-US-Growth.aspx#page1.

[66] http://www.stateuniversity.com/blog/permalink/College-Drop-Out-Rates-Who-s-to-Blame-.html.

[67] http://www.unesco.org/education/educprog/wche/declaration_spa.htm.

Creativity must be afforded the same status as knowing how to read and write as a way of tackling uncertainty and helping to solve problems

about the dream of democratising education using these new technologies, at least in the medium term. The digital divide means that some groups —due to age, gender, economic situation or cultural vision— have been deprived of access to certain technologies. To bridge this gap, there has been talk in recent years of the possibility of "mobile learning". While in continents such as Africa only a minority currently have Internet access from a laptop computer, it is predicted that by 2012 half of the residents in remote areas around the world will own mobile phones[68]. However, although this type of teaching methodology is seen as being effective as a complement to others, on its own it is not sufficient to provide a comprehensive education.

Going to extremes is never a good idea: the American system should not be exclusively oriented towards business objectives and profitability and Spanish universities should not be taken for granted because they are free. What we propose is taking the best of each model to build an education system, in the broadest sense, with fairer access. And we say "education system" advisedly: although we have been discussing the specific example of universities here, the need to democratise education extends to all levels.

Principle 3. Inspirational education: 'Yes, we can!'

Remember when things happened at a much more regular pace? It took years for a new edition of bulky hard-copy encyclopaedias to be brought out. Now we have *Wikipedia,* which allows the information to be updated instantaneously. And that really is useful, because the changes we are experiencing are happening faster and more frequently than ever before in history. A new technological advance, a product improvement, political reforms... news bulletins are beginning to look like a nightly shot-in-the-arm of information, whose effects wear off after a few minutes, leaving the body ready for more.

In a world in which breaking news soon becomes stale news and the best use for the *Encarta* "upgrade" is as a drinks coaster, how can we expect our teachers to begin educating pre-school children who will be starting college in 2024? How can teachers anticipate the educational needs of our children when we don't even know what may revolutionise our planet in the next five minutes?

This is precisely the argument of Ken Robinson[69], an internationally recognised leader in the educational development, creativity and innovation. It is practically impossible to prepare children and young people for such an uncertain future. In a world in which university qualifications are worth less and less, it is no longer realistic to think you can choose a degree with the best career opportunities, since it is impossible to know what may happen round the next corner... as the current financial crisis goes to show.

Ken Robinson argues that education should be used as a tool for "growing" the talent we all possess, which is different for each of us. According to Robinson, the present education system is wasting that talent, establishing a hierarchy in which mathematics and languages are given precedence over other activities such as theatre and dance. Creativity must be afforded the same status as knowing how to read and write as a way of tackling uncertainty and helping to solve problems. It is quite common to see young children displaying particularly imaginative behaviour, but this is gradually drummed out of them over the years by a culture of fear of getting things wrong.

[68] http://beyondprofit.com/mobile-learning-worth-the-effort/.

[69] http://www.ted.com/talks/ken_robinson_says_schools_kill_creativity.html.

If we want to grow through innovation we need to start by encouraging this creative capacity from the early years, especially in the school sphere

This inflexibility and lack of creativity accompany us throughout our entire academic life and extend on to our professional career where they can hold back a company's innovation capacity. When putting together Power Point presentations, everyone carefully follows the same guidelines on diction, intonation and appearance of the slides. Some of the ideas expounded by Future Trends Forum experts are quite simple but can help people think outside the box. For some of the talks in this sixteenth edition of the forum, it was decided to use the "pecha kucha" format. The result was a much more creative and informal presentation, which was both simple and concise, helping to maintain the level of interest and keep people's attention. The "pecha kucha" system, which has now spread virally across the world, follows a "20x20" format, in which twenty slides are shown for twenty seconds each.

If we want to grow through innovation we need to start by encouraging this creative capacity from the early years, especially in the school sphere. We must stop taking for granted that education has to be the same as a century ago, because we are light years away from the industrial revolution now. Patrick Newell, founder and director of Tokyo International School and Future Trends Forum expert thinks it is important to ensure that teachers and pupils are motivated and understand the mission of education in society for personal development. During the post-war period, the Japanese education system worked well, but it now forces pupils to study mechanically in order to prepare them to enter primary or high school. Moreover, Japanese culture tends to be tacitly condemnatory of mistakes. Although noted for their collective intelligence, the Japanese need to encourage individual creativity.

Newell has developed the "Relevant Learning Model" which does away with text books and proposes a curriculum with just six basic subjects related to overall understanding and problem-solving or innovation and design[70]. In this model, pupils are presented with a problem which they investigate by asking questions. They discover the answers to their questions using different methods of research and make a creative presentation of what they have learnt to the others. The model also takes into account the positive development of human characteristics and attitudes, as well as the active participation of pupils in the decision-making process, thus generating a high level of motivation, interest and commitment.

Sridhar Rajagopalan, founding director of Educational Initiatives and a Future Trends Forum expert believes it is fundamentally important to develop a system that teaches teachers to teach pupils. He encourages teachers to give classes using tools based on entertaining activities to avoid pupils falling into the learning-by-rote trap rather than actually understanding the problem they are presented with. One of his initiatives is MindSpark[71], a self-learning computer program which pupils use to learn at their own pace interactively, answering questions by levels of progressively increasing complexity. Obviously, each pupil makes different mistakes, and so the program personally guides each individual to complete the task satisfactorily.

There are many other innovative learning methods that focus on inspiring pupils instead of making them "learn for the sake of learning". The Waldorf Method stimulates the development of cognitive, moral, artistic, manual, musical and bodily skills. The Reggio Emilia schools provide children with all the possibilities of creation, knowledge and expression, so that they can shape their own culture[72]. The well-known educator Maria Montessori emphasised the importance of

[70] www.ea-tokyo.com/downloads/TIS-Newsletter.pdf.

[71] http://www.ei-india.com/what-is-mindspark.

[72] http://www.eduquemosenlared.com/es/index.php/articulos-maestros/214-reggio-emilia.

Untraditional teaching methods are not generally incorporated in any big way into national education systems

adapting the child's learning environment to his or her level of development. Glenn Doman's Institutes for the Achievement of Human Potential aim to significantly raise the intellectual, physical and social skills of both children with brain injuries and healthy children alike. They have made important progress among children with mobility problems who can now pull themselves around, crawl, walk or run for the first time, and children with sensory or learning problems who can now see, hear, speak, read or write for the first time.

Teachers must be one of the main sources of inspiration for pupils. Who can forget the figure of Mr Keating quoting Whitman ("O Captain, my Captain!") in the film *The Dead Poets Society* and instilling a *carpe diem* spirit to change the way his pupils learned? However, breaking the established rules is no easy task. It forces us out of our comfort zone. Nor is it easy to motivate teachers to become "captains" of their pupils or to convince pupils that learning can be an enriching adventure.

Untraditional teaching methods are not generally incorporated in any big way into national education systems, and we therefore need to reassess the mission of tomorrow's education. Why have areas such as trade changed so much and so quickly while our education systems are so difficult to budge? The great problem is that the cost of getting things wrong is so high. If the education system fails, students and society all lose out. This is why we cling on to mediocrity rather than taking a chance on a potential improvement. What is the emotional and human cost for pupils who have attended the *charter schools*[73] , now being closed down after just five years in operation[74]?

Many academics are convinced that achieving real change will mean bringing all the groups affected on board, so that they all collaborate and bring pressure to bear to make it happen. Students, teachers, parents and companies should set out their demands and their vision of what the education system that trains the citizens of the twenty-first century should look like, and work for it to become a reality.

Principle 4. Lifelong learning: never go to bed without learning something new!

The world's population is ageing rapidly. Improvements in health care and social services, together with a fall in the birth rate, have led to an ever larger proportion of elderly people in society. Worldwide, seniors are expected to outnumber children for the first time in 2045[75]. This will have a significant impact on the make-up of the education systems of the future.

Nonetheless, the driving force behind the economy is a workforce which will undoubtedly have to bear the growing burden of other dependent social groups. In such a scenario, people of a certain age will have to remain longer in work. The term *active ageing,* coined by the World Health Organisation[76] is ever more relevant. Given that these people have left the education system some time ago, in order for them to make an efficient contribution to the economy it is necessary to promote continuous training, especially in the acquisition of new skills and knowledge in areas of information and communication technology.

However, who is really responsible for extending these people's productivity? As is so often the case, the answer is that all interested agents must be involved in

[73] Primary or secondary schools that receive public funding although they are privately run.

[74] http://practicaltheory.org/serendipity/index.php?/archives/994-Why-Educational-Change-is-Hard.html.

[75] http://es.wikipedia.org/wiki/Envejecimiento_de_la_poblaci%C3%B3n.

[76] Process "of optimizing opportunities for physical, social, and mental well-being throughout the life course, to extend healthy life expectancy and quality of life for all people as they age".

The natural place for continuous training is within the company, where we spend most of our adult life

continuous training, in order both to open the way for active ageing and to maintain the competitiveness of the country's human resources.

First and foremost, the natural place for continuous training is within the company, where we spend most of our adult life. Training must be treated as a strategic asset because companies depend increasingly on knowledge, especially technical knowledge. We must not forget that knowledge is the cornerstone of the new economy, and therefore the professional advancement that a company can offer its employees will allow them to materialise that knowledge in human capital, multiplying the organisation's talent, facilitating its capacity to adapt to changes and improving its competitiveness.

David Smith, managing director of the Accenture Talent & Organization Performance service line, and Susan M. Cantrell, member of the Accenture Institute for High Performance, argue that when it comes to managing talent, unique solutions are no longer valid[77]. In their book *Workforce of One*, they say that if companies want to be competitive when the economy recovers and maximise the performance of all their staff, they must do away with the standardised approach to talent management and offer an individualised experience at work, for example, through staff segmentation and by offering modular options in training.

Microsoft tells certain members of its staff that they belong to the "high potential" group (segmentation) and draws up an individual development plan (training offer). In Spain, Accenture has a High Performance Centre which takes charge of training its employees. In 2010, the organisation invested nearly €10m in training in Spain. This represents an average of between 100 and 160 training hours per person depending on profiles and experience.

Secondly, in view of the high level of unemployment caused by the current crisis, governments should encourage continuous training within the corporate framework, through grants and tax incentives. Although there is a strong temptation just to rein in spending, optimise resources and weather the storm, sweeping continuous training under the carpet may be a serious mistake. Most people develop the majority of their skills at work; a person on the dole is therefore probably not acquiring new skills. The result is a vicious circle in which the lack of acquisition of new skills persists, leading to structural unemployment. Continuous training helps ensure people's employability, which is basic for galvanising the job market, especially at a time of crisis. People must be upskilled if they are to continue to be employable. In the current context, people are needed who are constantly learning and are capable of facing up to new challenges.

Dieter Hundt, President of the Confederation of German Employers, has set out his model of in-house training to reduce unemployment in other countries. The model consists of what is called a "professional university": the student has a training contract with a company and, at the same time, keeps up his or her education or advanced research in a laboratory or university department. In this way, business and university together implement the changes the system needs to cope with globalised competition[78]. In general, governments must give more economic and tax incentives to companies whose training programmes adapt to technological change and increase the productivity and profitability of the business world[79].

Thirdly, individuals must take a more proactive role as the architects of their own continuous training. Education systems must contribute to encouraging a desire to

[77] http://www.accenture.com/ar-es/outlook/Pages/outlook-online-2010-individual-talent-management-workforce-one.aspx.

[78] http://www.lavanguardia.com/lacontra/20110511/54152146193/copien-nuestra-formacion-en-la-empresa-y-su-paro-bajara.html.

[79] http://www.formacioncontinua.eu/Informacion/Beneficios-Economicos-para-Empresas.

Individuals must be more aware of the importance of demanding the training they need to succeed professionally

learn throughout a person's life and must be capable of catering to this need. As employees, individuals must be more aware of the importance of demanding the training they need to succeed professionally and not limit themselves to the training they receive from the company. Diego Sánchez de León says that people must have a learning mentality. Integrating work and learning would help develop such a mentality, because learning would be contextual and would be integrated into what we do each day.

Fourthly, as well as encouraging continuous training, it is important not to waste one of the main assets employees possess: their working experience. In Spain, a system has been started up for assessing and accrediting the knowledge acquired through experience, rather than through formal education routes. This increases the employability of people who lack formal qualifications but have more than enough professional skills. If these skills are recognised in an official certificate, they can benefit from their experience and be more "attractive" from a work perspective.

Fifthly, it is important not to forget a crucial aspect which we have highlighted throughout this publication: continuous teacher training is also a factor of success; the results of any educational institution depend to a great extent on the quality of its teaching staff. There can be no doubt that continuous training is an asset that allows all types of professionals to integrate and adapt to an increasingly globalised panorama, while at the same time the teachers' capacity to adapt to technological changes in education will become increasingly important (e.g. on-line training).

Finally, it is important to stress the importance of encouraging Internet usage among the population as a way of promoting continuous training and employability of people who have completed their formal education. The Internet has been shown to be the main source of information on training opportunities for people aged over 25 (see Illustration 15).

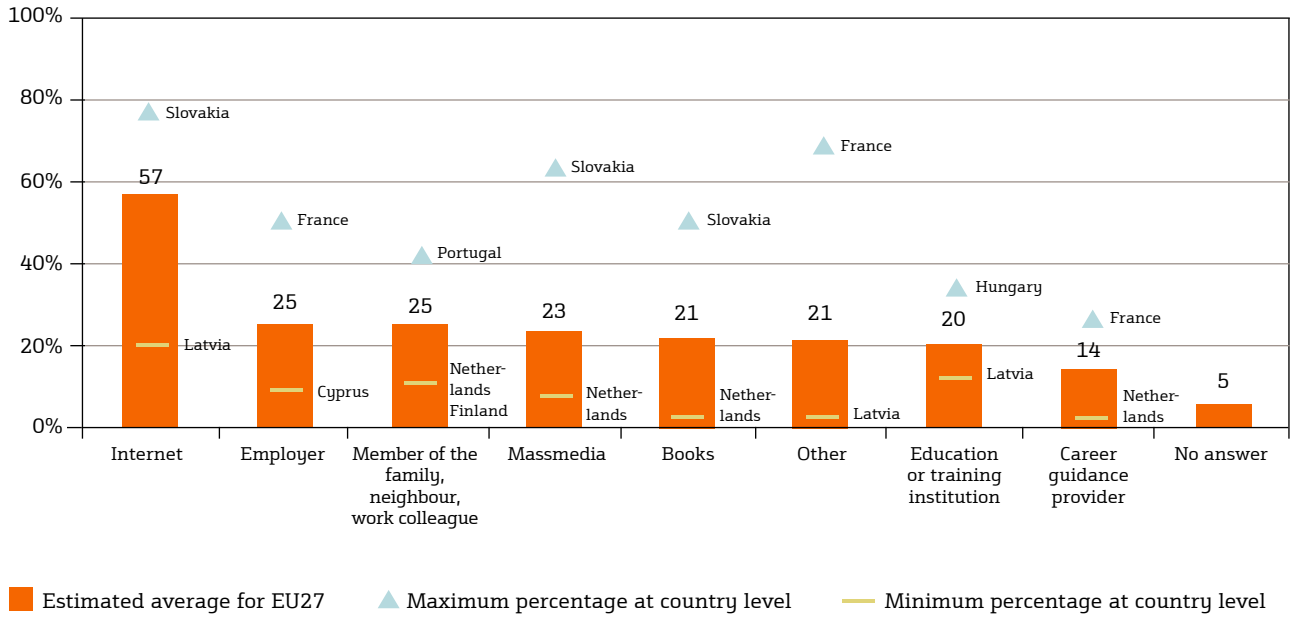


Illustration 15. Distribution of sources from which 24-64 years old found information on learning possibilities, EU27, 2007.
Note: multiple responses possible, final data are currently available for 17 countries; data for France and Slovenia are provisional.
Data source: AES, Eurostat.

The better the grades and the greater the proportion of pupils going on to higher education, the more funding they should receive

We live in a world that is getting older and which is changing at lightning speed. New technologies, globalisation and social networks are just some of the trends that are changing the way we learn, work and socialise outside university lecture halls. People who remain keen to learn throughout their lives and get the support and the tools they need to do so will have greater possibilities of triumphing in the new environment. Not only will they be the winners, so too will the societies and the countries of which they form part.

Principle 5. Efficient and enterprising education: the business view of a universal right

In some countries, especially developing ones, politics frequently interferes in education. This excessive politicisation manifests itself in such situations as constant government-influenced syllabus changes; the presence of politicians on school committees; politicians and other members of the oligarchy negatively affecting the contents and output of textbooks; and the phenomenon of "ghost schools" (which only exist on paper to claim government funding)[80]. To prevent such situations from arising, more transparent systems need to be put in place for electing school committees and for awarding grants.

In addition, these grants should be linked to the schools' performance. The better the grades and the greater the proportion of pupils going on to higher education, the more funding they should receive. Including "business" parameters in education would prevent wastage of resources and would oblige them to measure results.

In America, *charter schools* are privately-run but publicly-funded primary or secondary schools. They seek to capitalise on expertise of the private sector to improve on the running of state schools that are required to present satisfactory performance results. And because these initiatives arise out of the concerns of parents, teachers and businesspeople, they have the greatest interest in offering high-quality education. In most cases, the salaries of the principal and teachers are target-linked.

The efficiency of the schools' private management translates into significant cost cutting and a reduction in the rate of teacher absenteeism, an increase in individual pupil attention, better access to technological resources and improved school upkeep. However, opponents of this type of initiative accuse the schools of turning down pupils with difficulties to avoid lowering the overall results, a policy that leads to increased segregation. Moreover, they say that charter schools yield to the temptation to focus excessively on results at the expense of the true goal of teaching.

However, initiatives such as Massachusetts 2020 are proof that a public-private alliance can expand and improve learning opportunities of a state's children. The scheme has a budget of over twenty-six million dollars, which is spent on a variety of curricular and extra-curricular initiatives that have revolutionised the world of education[81]. It was the first programme of its kind to extend teaching hours in participating schools by 300 hours and the first to undertake initiatives such as the Citizen Schools, which put adult volunteers in contact with young students to develop their academic and leadership skills for school success.

In India, Grey Matters Capital seeks to overcome the lack of resources and excessive red tape surrounding the government-run education system by

[80] *Case studies on the role of politicisation of education in conflict-affected countries*, Background paper prepared for the Education for All Global Monitoring Report, UNESCO 2011.

[81] http://www.mass2020.org/.

The practise of measuring results, already widespread in business, should be extended to the education system

pioneering the establishment of affordable private schools. Low-income families are charged affordable fees, which allow the schools to meet their costs and become sustainable enterprises. A Swedish reform dating from 1994 allows any person who meets certain basic standards to open a school and take in children with state funding[82]. The local municipality has to pay the school what it would have spent on educating the pupils itself (the equivalent of between €6,000 and €8,000 annually per child). This has led to the opening of numerous schools. Among the most important are the Kunskapsskolan ("knowledge schools"), a kind of educational Ikea with 700 employees, 10,000 pupils and an operating profit of over €7m. Who said that education wasn't a secure investment?

There is general agreement among the Future Trends Forum experts. An overwhelming majority (83%) believe that the education system must combine public and private (see Illustration 16). Experience shows that neither of the two areas is efficient on its own, but integrating the two helps get the best from both: on the one hand, a set of minimum standards and, on the other, greater variety and option.

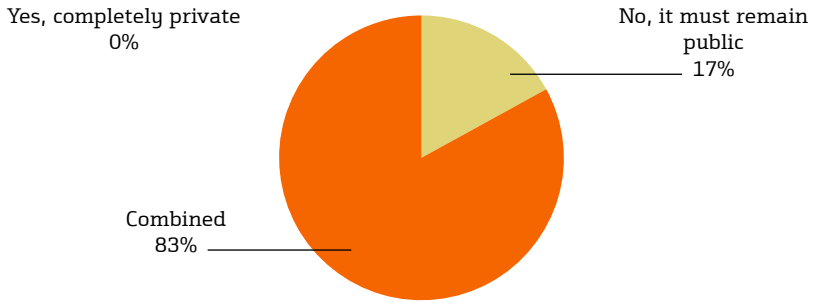


Illustration 16: Do you think that the future of quality education lies in private hands?
Source: Authors.

Creating an ecosystem of educational agents

Probably as a result of the influence of the British and American business world, there is a growing tendency for companies to measure their return on investment in training, whereas previously the pupils' satisfaction with their educational experience was considered sufficient. This interest in measuring the results of education is nothing new. As early as 1959, Kirkpatrick defined an innovative assessment model that was remarkable for its simplicity and flexibility. It consists of four consecutive levels, each one serving as the foundation for building the next. Level I evaluates reaction, Level II learning, Level III behaviour and Level IV results. It involves use of a control group, leaving a certain length of time for the results to be realised, measuring before and after the programme and considering the costs versus the benefits. The problem is that most studies analyse the first two levels, sometimes the third but very rarely the fourth level.

The practise of measuring results, already widespread in business, should be extended to the education system, creating the necessary mechanisms to make the costs of education visible. This would act as a method of assessment (and comparison) in order to capitalise on public investment in education. Parallel

[82] "The Swedish Model", *The Economist* (June 2008).

private investment would help cut state spending, but it would need to be linked to the schools' academic performance. Nonetheless, it is important to bear in mind that withdrawing funding from underperforming schools, far from being a solution, only exacerbates the problem.

Participation by the business world in education is not limited to extrapolating business management to education centres. More than ever before, employers are essential for creating employment and economic wealth and for addressing the growing set of global challenges faced by society. Recent studies by the Kauffman Foundation show employers to be the primary engines of economic growth and job creation in the USA[8e].

We need to build an ecosystem (see Illustration 17) that includes all involved agents in which innovation can flourish, creating new jobs. To encourage such a framework, it is essential to change the approach of education to face up to the challenges of the twenty-first century and influence future professionals from all academic levels.

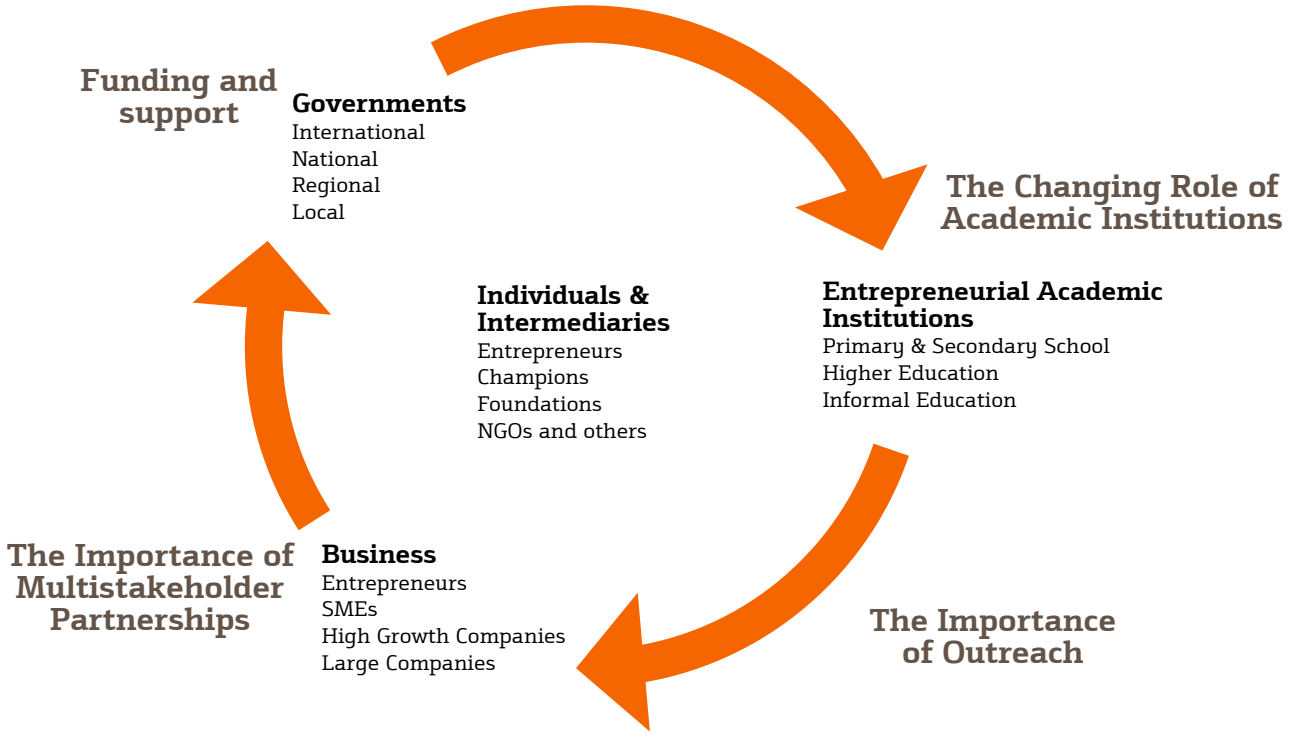


Illustration 17: The business ecosystem.
Source: Unlocking Entrepreneurial Capabilities to Meet the Global Challenges of the 21st Century, World Economic Forum Global Education Initiative (June 2011).

First, more programmes need to be set up to allow secondary, and even primary school pupils to become familiar themselves with the technological, economic and professional environment. All young people, regardless of their future aspirations, should be exposed to entrepreneurship. This is precisely what the Lycée Français in Madrid does with its Professional Environment Observational Work Experience

[83] *Unlocking Entrepreneurial Capabilities to Meet the Global Challenges of the 21st Century,* World Economic Forum Global Education Initiative (June 2011).

Innovation incubators need to be fostered, since they provide the perfect environment for experimenting without fear of failure

for third-year secondary-school students[84], who get to see the day-to-day workings of a company and the running of one or several of its departments, as well as analysing a range of jobs[85]. Young Enterprise Scotland is a programme that offers young people aged between five and twenty-five "the opportunity to gain personal experience of how business works, understand the role it plays in providing employment and creating prosperity, and be inspired to improve their own prospects, and the competitiveness of Scotland"[86] while the Valnalón initiative in Asturias, Spain, includes a comprehensive strategy of training in business culture and initiative from the first levels of education.

Secondly, interest in business initiative campaigns needs to be encouraged through websites such as Global Entrepreneurship Week, which inspires people to explore their potential as self-starters and innovators. On- and off-line media can also be used media to provide case histories of successful employers, who can be invited to take part in classroom discussions.

Thirdly, it is necessary to forge more solid relations between the business and educational worlds, with projects such as Akademia, set up in 2006 by the Bankinter Foundation of Innovation which aims to influence the education and innovating attitude of future leaders. The project seeks to create an environment and a context that will favour innovation in education through initiatives such as the "360-degree innovation course" at the best Spanish universities, seminars on themes of greatest impact in global innovation given by the Future Trends Forum experts and training and professional experience in companies considered most innovating in the global economy.

Finally, innovation incubators need to be fostered, since they provide the perfect environment for experimenting without fear of failure. Such incubators should be incorporated into schools and universities and students encouraged to participate in the initiative with innovating ideas, which should be recognised by way of prizes. Who knows? The next Mark Zuckerberg, Amancio Ortega or Estée Lauder might be sitting in a secondary school classroom at this very moment, about to create the next business model that will revolutionise the planet.

Principle 6. A well-rounded education for twenty-first century citizens: what do we expect of them?

French paediatrician, psychoanalyst and educator Aldo Naouri has a somewhat controversial view of the way parents behave towards their children. Naouri argues that some children take advantage of the fact that their parents try to be flexible and fair with them, tyrannising them. The insistence on "being liked by your children" is causing many to grow up thinking that can do "whatever they want, as long they are happy".

Unfortunately, the financial crisis of recent years has been a brutal reminder that the truth is quite the opposite: you can't get everything you want in this life. People have lived well beyond their means, driven on by the consumer society and a sense of hedonism, in the process jeopardising the sustainability of our system and our ethical values. The economic setback of the recession actually hides a much deeper and longer-lasting crisis that may take generations to overcome.

As a result, many believe that young people today should be educated to be good citizens, committed to sustainability and better coexistence. For example, Aproch

[84] http://www.lfmadrid.net/es/niveles-educativos/secundaria/389-sence-dobservation-en-milieu-professionnel-en-troisi

[85] http://www.lfmadrid.net/images/stories/LYCEE/programacion_previsional.pdf.

[86] http://www.eastrenfrewshire.gov.uk/young-enterprise-2010.pdf.

At the end of the day, it is crucial for education systems to contribute to creating a tolerant society

(A Protagonist in Every Child) is an organisation that runs initiatives intended to turn the urban area into a playground where children can learn to respect the city and its people, and be respected in return.

There is a long list of "subjects" which need to be taught in education systems. They include emotional intelligence, creativity, use of the imagination, corporal expression, concentration, etc. Eduard Punset, Spanish jurist, writer, economist and science writer says in his blog that "future work in the field of education will mean reforming the hearts of children and young people, neglected by an exclusive obsession with academic contents"[87]. This, he says, will mean achieving two objectives. Firstly, he advocates "learning by managing the [ethnic, cultural and social] diversity of modern classrooms, which have been profoundly changed by globalisation", and, secondly, he defends the idea that "teachers should encourage children to learn about positive and negative emotions [...] how to manage their anger, sorrow, aggression, happiness, envy, scorn, anxiety, disgust and surprise".

Meditation is becoming a particularly important discipline in today's hectic environment. As well as helping reduce anxiety and improve sleep patterns, meditation has been shown to increase creativity and lead to greater confidence and closer relations[88]. The David Lynch Foundation, set up by the famous American film director, seeks to attend to populations at risk of suffering what they call "epidemic levels of chronic stress and stress-related disorders", including students from the marginal and conflict areas of large cities.

In this context, education must clearly not be limited to teaching academic knowledge. The Finnish system spends a lot of class time on art, music, cooking, carpentry, metalwork and clothes-making. Contrary to what one might think, these classes encourage students to learn mathematics and science, co-operation amongst companions and respect for people who earn a living from manual labour[89].

However, the inclusion of aspects such as ethics and religion in the curriculum is controversial. With many Spanish parents insisting that the state must be "non-denominational" and an influx of immigrants from different cultures making it difficult to accommodate all their different religious beliefs, the continued involvement of religious orders such as the Jesuits in education is looking doubtful.

Nonetheless, in such a personal area as the upbringing of children, parents should continue to have the option of choosing the type of education and the values they instil in their children. Indeed, this choice is not simply limited to choosing between a religious or a non-religious school, but may involve contact with one particular culture or language. The Beijing Foreign Studies University and the Lycée Français are examples of schools in which pupils anywhere in the world can receive an education within the context of a specific national culture.

At the end of the day, it is crucial for education systems to contribute to creating a tolerant society. While globalisation may be causing some traditions to be lost and other foreign ones adopted (Halloween celebrations in Spain are a good example), the important thing is to strike a balance between maintaining local culture and traditions and encouraging openness to different customs, religions and ways of life.

[87] http://www.eduardpunset.es/2225/general/la-crisis-de-fondo-esta-en-la-educacion.

[88] http://www.parentingoc.com/component/content/article/449-featured-articles/2062-empowering-children-through-meditation.html.

[89] http://www.tnr.com/article/politics/82329/education-reform-Finland-US?.

The tendency for employees themselves to demand more personalised training and more diverse content should be encouraged by making courses shorter and using multiple supports

We should not forget either the great influence the media has in educating our citizens. It is important to ensure that the values of the audio-visual industry and market are not systematically contrary to the values of respect, public-spritedness, tolerance and democracy.

Principle 7. Personalised education: you're the real protagonist

The "one size fits all" approach no longer works. Companies spend a fortune offering their customers personalised products, exclusive care services and unique shopping experiences. So what happens to those companies' other "customers"? Having accepted that human talent is one of the basic pillars of their organisations, why do firms still fail to differentiate between individuals in their human resource practises?

In an age of increasing diversity, in which each employee has different skills, working styles, preferences and motivations, using the same way of dealing with everyone is unlikely to be the best prescription. According to Accenture's Workforce of One, the most effective way of recruiting, retaining and managing talent is to adapt each employee's work experience by personalising the most common human resources practises: work allocation, payment, career management, etc. And training is not an exception.

By adopting an individualised approach to talent management, treating each employee as if they were a "workforce of one", Accenture's comprehensive research has shown that large companies such as PepsiCo, Nike, Procter & Gamble and Microsoft are getting the maximum performance from their employees. Contrary to what one might expect, throughout the financial crisis, these top companies have kept investing in human resources practices, including training. It's precisely when things are going badly that it's most important to identify the best employees and hang onto them.

Any human resources manager today will take into consideration the employees' productivity, the organisation's flexibility and the staff's commitment. Personalised training is a way of tackling these priorities. Hectic office working hours leave little time for training. It should therefore be up to the employees themselves to decide how long they want to spend acquiring new knowledge and at what pace. By adapting to the needs of each employee, personalised training allows each person to learn where and when suits them best, fostering a more flexible environment and boosting productivity. These improvements help people feel happier and boosts job satisfaction.

The tendency for employees themselves to demand more personalised training and more diverse content should be encouraged by making courses shorter and using multiple supports; in other words, doing anything that makes it possible to learn more and better. Technology is the icing on the cake. Computer applications are already available that allow lessons to be tailored to individual needs. This is particularly useful for students who want to build their own education, because the tools allow them to ignore things they already know and focus on areas they need to brush up on.

Technology significantly reduces the cost of individualised attention, which would otherwise be economically unviable. In the section on "Education 2.0", we will take another look at the technological advances that are allowing individuals to take a

The dream of guiding future citizens to the highest academic excellence is a considerable incentive for continuing to innovate the methods and technology

more proactive role in their training and making it possible to offer more specific training for different profiles across a very wide spectrum.

Naturally, such methods are not meant to take the place of teachers, but they can be used as a complement for more gifted pupils who want to further extend their learning or, conversely, for students who need more personalised attention to keep up with the rest of the class.

Investment in training also needs to be targeted to a lesser extent on developing the materials themselves, and more on learning and experience, in order to appeal to a wider public. The goal of the training should be to increase people's capacity for assimilation so that they can absorb a greater amount of learning. We need to revive people's desire to learn and make them aware of the value of education.

This philosophy applies not only to in-house training; it should be a maxim for the entire education system. Personalised teaching was created to strike a balance between providing individual support for each pupil and encouraging a social dimension for education. The idea is to improve standards of educational quality by focusing education on students' individual characteristics and needs, allowing them to develop their full potential. Although a shortage of resources and the difficulty of changing the educational mentality may get in the way, the dream of guiding future citizens to the highest academic excellence is a considerable incentive for continuing to innovate the methods and technology necessary to achieve an education system tailor-made to fit its pupils.

The Future Trends Forum experts believe that personalization of education, together with the associated innovation, are the two most important keys for twenty-first century education.

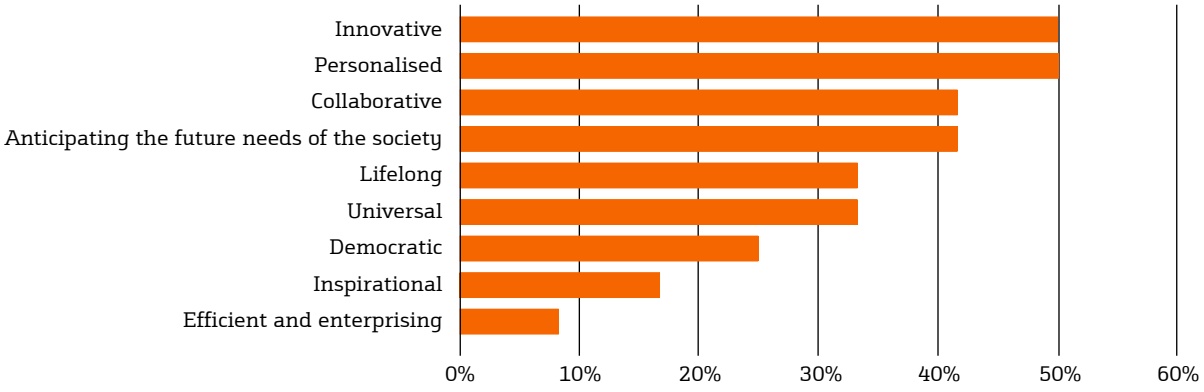


Illustration 18: Which of the following features do you think are most important for twenty-first century education?
Source: Authors.

Unfortunately, personalised education is only possible in developed countries that already guarantee a minimum of schooling and have developed different employability options for the future. In developing countries, on the other hand, any discussion of greater personalization of education makes less sense, given that for the time being the focus must be on adult literacy and universal education from an early age.

The question needs to be asked: should education be geared towards training the employees of the future?

Principle 8. Training the citizens of the future: the crossroads of anticipating the future needs of the society

Bad News: having a university degree is no longer a guarantee for the future. At times of crisis, the competition for jobs is tougher than ever, with competing candidates sporting various degrees, languages and masters. The on-line publication Chronicle of Higher Education calculates that between 1990 and 2007 the number of students that went to university increased by 22% in North America, 74% in Europe, 144% in Latin America and 203% in Asia[90].

This move to university education in developing countries is pushing graduates' salaries down. Furthermore, there is another growing tendency for certain jobs to be "offshored". One particularly significant example is the ever greater number of international consultants who are hiring IT professionals in India. Paradoxically, skilled work is more likely to be offshored than manual labour. "A plumber or lorry-driver's job cannot be outsourced to India. A computer programmer's can"[91]. New technologies allow certain jobs, especially those related to IT, to be performed remotely. This is one of the contributing factors behind the fact that university graduates in developed countries no longer have guaranteed employment, as they did a few decades ago.

Moreover, there is a growing disconnect between what the education system teaches and what the market needs. We live in such an ever-changing environment that there is no way of telling what the political and economic situation will look like in a few years' time, let alone the jobs market. With globalisation leading to a restructuring of the economy, technological advances and a continued financial crisis in many countries, university students are probably not being readied for the challenges they will face when they have to look for work.

The question needs to be asked: should education be geared towards training the employees of the future? Is it reasonable for it to be largely designed to meet the needs of the labour market? The concept of *employability* is used to refer to a person's possibilities of finding work. It depends on factors such as the market demand for a certain job profile and the number of candidates matching it, and the candidate's years of experience.

Studies show the appeal of certain university degrees. In Spain in recent years, the degrees with the most career outlets are business administration and management, industrial engineering, medicine and economics. The offer for degrees related to construction, such as architecture and some engineering courses, has fallen from 17.56% to 7.5% of total employment supply in just two years[92]. So, what is in demand today? Ironically, of the degrees on offer in Spanish universities, those most in demand among graduates are industrial engineering, computer engineering and civil engineering, together with medicine and economics. The number of computer engineering graduates from German universities has fallen from 17,000 in 2006 to 14,000 in 2010. In France, the number of science graduates also fell from 46,000 in 1995 to 29,000 in 2002. Likewise, in the US, in 2003 more than twice as many students graduated in art as in mathematics and physical sciences put together[93]. And the demand for courses is directly proportional to their salary prospects. Does this mean that more vocational degrees with less demand, such as languages, are fated to be badly-paid?

[90] Angst for the educated, *The Economist* (September 2011).

[91] http://www.economist.com/node/21528226.

[92] http://www.adecco.es/_data/NotasPrensa/pdf/231.pdf.

[93] *Reinventar la educación para garantizar la competitividad*, Accenture (June 2009).

Employability should be fostered in a wider sense and for all levels of education, not just university

Some governments take the alignment between their education system and the professionals they produce very seriously. The Finnish education system is now one of the most admired in the world, but this was not always the case. In the 1970s, the government saw that it needed to make up for the country's lack of natural resources with professional talent that would allow it to modernise its economy. This required a structural reform of the education system to turn it into one of the most efficient in the world.

What specific measures need to be taken to allow this ratio between work and education to be more effectively adjusted? The Future Trends Forum experts believe that the government should make it a priority constantly to match the academic syllabus to the real socio-economic situation. If a person with a bachelor's degree can expect to earn 75% more in his or her lifetime than a person who has only graduated from high school[94], the competitive advantage of completing higher education is clear, but the government should concentrate more on orienting that education towards employability. Moreover, employability should be fostered in a wider sense and for all levels of education, not just university. Vocational education in Germany is a perfect example. Young people can choose between 356 trades in technical fields, from commerce and services, through "dual learning" in which training is provided in cooperation between state and business.

To improve employability, it is first necessary to promote, or even reward, those who choose the degrees that the labour market demands, with a view to future competitiveness. If more engineers or scientists are needed, an attractive professional career should be offered that includes inducements for R&D.

Secondly, priority should be given to a more practical approach to learning, tailored to the skills necessary in a working context. Rather than just acquiring knowledge, people will need to be capable of self-managing, learning continuously, solving problems, facing up to and adapting to real-life situations and collaborating in different environments. The idea is to encourage a "comprehensive skills degree"[95] with a curriculum that focuses on forming skills for leadership and innovation. An economy based on services and technical knowledge not only requires further development of technical knowledge, so necessary in this computerised generation; it is also important to instil behaviour that will allow success in a commercial services-oriented economy

Thirdly, workplace training needs to be favoured over traditional education. And with the right legislation, the corporate world can be encouraged to participate in the initiative. Business must be open to the possibility that skills and competences learned in other fields can easily be extrapolated to their situations. It is crucial to forge links between business and education centres in order to align demand and supply on the labour market. Only in this way can new employment opportunities be developed and a favourable environment for progress and competitiveness be created.

Principle 9. Education 2.0: Innovative methods for a more appealing and effective education

The new telecommunications age has opened up a vast range of possibilities for keeping in touch: any place, anytime and with anyone... even a teacher. Many experts believe that the Internet has democratised knowledge and that can make

[94] http://www.economist.com/node/21528226.

[95] *Educación Efectiva para el Empleo: Una Perspectiva Global,* Edexcel (2009).

E-learning offers an alternative for individuals who cannot afford the expense of a university education

a significant difference when it comes to training people. The notion that "It's not what you teach, it's the way that you teach it" takes on a whole new meaning when Information and Communication Technology (ICT) is applied in teaching. However, the digital gap still prevents certain groups, such as the populations of developing countries, from accessing particular technologies.

Traditional teaching tends to focus on the figure of the teacher imparting standard content, without taking into account each pupil's individual needs. Classes are necessarily face-to-face, requiring participants to be in a given place at a given time. While it is true that new formulas, such as the field method, are encouraging a high level of class participation, in traditional education students adopt a fairly passive role in which "teaching" takes precedence over "learning".

The Future Trends Forum experts envisage a world in which ICT is used to improve the quality of teaching and learning, providing a support for both pupils and teachers. The mere fact of virtualising educational contents —in other words, creating computer versions— has revolutionised the way in which education is offered. It allows it to be provided on demand and *just-in-time* and to be mobile, as if it were in itself a technology.

ICT opens up a whole array of technical supports that provide more active and interactive learning for students which can easily be adapted to different levels. Using a computer, it is possible to reorient the subjects high school pupils most dread. The Computer Based Math initiative refocuses maths teaching towards concepts that pupils find interesting and relevant and away from hand-written calculations that could be done on the computer.

And the use of technology in education provides access to groups that would otherwise be left out. eLearning Africa, the annual conference held this year for the sixth time, is convinced that ICT has vast potential in education on a continent where some countries, such as Senegal, still suffer shocking rates of illiteracy. 47% of Senegalese do not know how to read and 2.7 million children do not attend school[96]. eLearning Africa is therefore creating a distance learning network in Africa, where it is not always easy to reach everyone. Obviously, distance learning, or e-learning, depends to a great extent on a reliable Internet connection for educational solutions to be sustainable, and national governments need to prioritise the construction of the necessary infrastructure.

Technology too can help finance education in developing countries. The website Givology uses the concept of social networking to set up education initiatives around the world. Anyone online can donate funds, either to non-profit organisations with education-centred initiatives or to specific named young people whose story appears in the form of a Facebook profile. To date a total of 1,335 donations have been made to 127 students and 42 different projects, to a total of $76,517.

Another very important aspect of technology-enhanced distance learning is the cost reduction it achieves. E-learning offers an alternative for individuals who cannot afford the expense of a university education. Centres such as the University of Phoenix are offering pupils the chance to study a degree at their own pace, at a fraction of the usual fees. They can even participate in classroom activities remotely, using the university's iPhone app.

[96] http://www.umoya.org/index.php?option=com_content&view=article&id=6528%3Alento-avance-de-la-alfabetizacion-en-senegal&catid=1%3Aactualidad&Itemid=34&lang=es.

Smartphones are ushering in a whole new chapter in distance education

Smartphones, such as the Blackberry, iPhone and Android-based devices are ushering in a whole new chapter in distance education. As well as being the ultimate advance for overcoming geographical barriers, they can take advantage of the fact that mobile phones are already very in widespread use amongst people in developing countries, even in rural areas. For example, in Bangladesh, 50 million mobile users can potentially use their devices to receive English classes via the BBC Janala programme[97], which has reached four million people in fifteen months.

With the use of platforms such as Khan Academy, a sort of YouTube on education, with a virtual library of "over 2,700 videos covering everything from arithmetic to physics, finance, and history and 268 practice exercises" it is easy to learn simple lessons in a question of minutes.

According to the last study by Bureau Veritas Business School, 71% of mobile phone users think that these devices will soon become common learning tools, although nearly the same percentage (70%) think they will be used in tandem with other types of education[98]. Many people, heavily influenced by a more traditional education system, are likely to have misgivings when it comes to handing over responsibility for their education to technology, however flexible it may be.

Education 2.0 need not necessarily be exclusively bound to technology. The face-to-face component is a very positive part of education, especially in the case of large groups where individual members can learn from each other. Harvard Business School, pioneer in the case method mentioned above, is now exploring new methods to continue to lead the field among business schools. The "field method" is meant to involve pupils as much as possible and narrow the divide between knowing and doing, giving them the opportunity to practise what they would do in different management situations in a company, from the launch of a new product in an emerging market to self-starting a new business.

For example, during the Future Trends Forum the experts were able to group learn using an interactive system called Cinematrix, which allowed them to reply to questions and make decisions using wireless devices. Kurt Squire, assistant professor at the University of Wisconsin and Future Trends Forum expert, is the co-founder and director of Games, Learning & Society Initiative, which researches the potential of using video games in learning, based on dopamine release during play. The British organisation Future Lab has also developed an initiative that is looking for ways of transferring video-game-based learning to the classroom.

The emergence of ICT in the area of education is now a reality, with teachers able to choose from a host of resources to develop a new way of teaching.

Principle 10. Collaborative education: teaching is for everyone

There is a widely-held notion that teachers are the only people responsible for young people's education. After all, they are best qualified to prepare the contents of a subject, decide on the teaching method, design associated tasks and follow up on how well the student has absorbed the knowledge.

Throughout this report, however, we have argued in favour of a greater role for the other main agents (government, companies, parents, the students themselves,

[97] http://www.bbc.co.uk/worldservice/trust/whatwedo/where/asia/bangladesh/2010/01/100115_bangaldesh_janala_project_overview.shtml

[98] http://www.equiposytalento.com/noticias/2011/09/16/un-71-cree-que-el-movil-sera-una-nueva-herramienta-basica-para-el-aprendizaje/.

Young people's education and their future is too great a responsibility to be left to a single agent

etc.) in defining and building the future of education. Although it is true that the government must establish certain minimum standards by which all education centres should be assessed, we need to distinguish between government-*financed* education and government-*run* education. In some successful arrangements, the running of schools has been placed in private hands.

Independently of the whole question of public-versus-private, one conclusion we can draw is that young people's education and their future cannot be left to national governments. It is too great a responsibility to be left to a single agent. Intervention or no, the important thing is the collaboration and it is crucial that all agents in society get involved in educating the citizens of the twenty-first century. The priority must be to reinforce existing bonds and create new ones among agents, with the common goal of improving young people's employability by making the knowledge imparted in the classroom match the skills employers actually demand.

One way of doing this is by giving these agents a seat on school committees, where they can gain first-hand experience of the problems schools face. The Massachusetts Education Reform Act requires that all public elementary, secondary, and independent vocational schools establish a school council which must be made up of the school principal; parents of students attending the school who must be elected by the parents of the students in the school; teachers selected by other teachers in the school; community members; and at the high-school level, students[99].

The idea is to form groups made up of the main agents in what the Future Trends Forum experts call "hives of hubs" to overcome some of the obstacles faced by the implementation of an efficient and high-quality education system.

The active role played by the agents, especially the parents, can go hand in hand with new technologies and social networks that facilitate widespread access by participants. E-mail is increasingly being used to keep parents informed of their children's progress. The Listserv software application manages communication between groups of people, who can exchange messages and discuss subjects of common interest to form a "virtual community". Nearly 96% of all American schools now have websites[100], which are used to provide information on school activities and initiatives and to ask parents for feedback. It is a model that should be imitated in other countries. The next step is to provide chat sessions and video conferences to encourage parents to get involved in the education of their children.

Tools such as the intranet and chat rooms also serve to develop virtual learning environments that allow remote interaction of teachers and pupils. To encourage students to participate and collaborate in their education, it may be very useful to design on-line interactive training that supports continuous learning and complements face-to-face education, to help cut school failure rates. Young people of school age today have never known a world without the Internet. Because they have grown up with the technology, they are highly skilled in using it. They are very likely to be more motivated to learn contents or research using a mouse-click or sliding the display on their iPads, than reading large volumes from an encyclopaedia. The use of peer-to-peer technology encourages collaboration between pupils and increases the potential for them to learn from each other.

[99] http://www.pplace.org/publications/bulletins/Spanish/ppbulletinv9n1span.pdf

[100] http://www.educationworld.com/a_curr/profdev/profdev124.shtml

It is important not to think that collaboration by agents —such as governments— simply means opening their chequebooks

Where an Internet connection is not possible, initiatives such as Homework Hotline (which is also creating web contents) offer free phone tutorials for parents who have difficulty helping their children with their homework. The parents' educational level is of key importance in pupils' school performance. However, some are not capable of participating actively in their children's education because they do not have the necessary knowledge or simply do not know how to get the ideas across. Children don't come with a "book of instructions". As a result, a vast amount of help is now becoming available to guide parents as educators. The Universidad de Padres on-line (Parents On-Line University) is an educational project run by José Antonio Marina to work with parents throughout their children's entire educational process. As the saying goes: "to educate a child, you need the whole tribe".

At the same time, it is important not to think that collaboration by agents —such as governments— simply means opening their chequebooks. Grants only serve to finance a knowledge base., i.e. the minimum compulsory education. From a certain level, state financing should be tied to results: the better the results, the greater the financing. This incentivises pupil involvement. This approach is particularly interesting at university and vocational or professional specialisation level[101].

Ultimately, collaborating in improving a country's education system, means improving young people's capacity to integrate in their community, encouraging social cohesion, reducing alienation and crime and enabling them to attain a better standard of living.

[101] The Role of Government in Education, Milton Friedman.

5 A review of the Spanish case and a comparison with best practices

- Great progress and some shortcomings
- Moving toward a new educational model

In recent years, Spain has been a major change in terms of population distribution by academic level. In 2000, more than 57% of people living in Spain aged over 16 had secondary or higher education qualification; by 2009 this percentage had risen more than eleven points. The percentage of the population with second-cycle (high school) secondary education increased by nearly three percentage points during the period.

One of the most serious problems facing the Spanish education system is the school drop-out rate. In the period 2000-2009, the number of pupils leaving the system before graduating rose by 2.1% to 31.2%. This figure is much higher than in other countries in the region.

The gross rate of university attendance —in other words, the ratio between the total number of pupils of any age, enrolled in the education in question and the population of the theoretical age group that could access this education— has risen since 2000-2001.

The figures show an important quantitative advance in the country's education system, but from a qualitative point of view, the training of professionals has not evolved adequately during the same period.

Education in Spain is built on two pillars. Students learn the knowledge accumulated down the years. They perform assignments, sit exams and carry out guided practical work. These tasks are identical for all and supposedly guarantee equality. They are therefore based on individualism and speed of reaction (always superficial and mechanical) and not on reflection or imagination.

We need to teach our pupils to use that accumulated knowledge to imagine, to address new problems, to invent the future, encouraging learning from observation, creativity and enterprise.

Spanish society has not taken account of the economic importance of knowledge, and neither have our education, our culture or our institutional framework. This is because innovation has stood at a far remove from classrooms and from society in general. Changing this situation will entail tackling a range of areas: the crucial role of innovation communities and universities in encouraging such virtues and by extension, innovation culture.

The profile of Spanish companies restricts the benefits of university/business collaboration, both in the educational field and in the area of innovation and technology transfer. Our manufacturing sector contains very few large companies and is overweighted in favour of sectors that generate little added value, with small high- and medium-tech industries and an undertrained work force.

In the area of research, Spain accounts for 3.4% of global output, making it the world's ninth largest producer. Two thirds of this scientific output is generated in universities. This is a remarkable result bearing in mind that Spain only invests 1.38% of its GDP in RDI, far less than the OECD average of 2.3%. It places the Spanish university system among the four most productive economies in science.

However, it is important to remember that the important thing is not just to produce research, but also to innovate, i.e. to transfer the results to the socio-economic world to make it more competitive. And this is where the Achilles' heel is to be found: despite being the world's ninth largest scientific power, Spain comes barely 42nd in the world competitiveness ranking. The challenge of innovation essentially requires that companies invest in RDI and strengthening knowledge transfer models to make them faster and more flexible and allow collaboration between all agents; in other words, we need to improve innovating culture. At this time, the scientific/technological supply of the universities is not matched by an adequate demand in Spain. In several universities, a growing number of projects are being developed with foreign organisations, whereas national projects are either at a standstill or are advancing at a snail's pace.

Various studies show that the nearer a country is to the technology frontier, the more advantageous it is to invest in knowledge by way of universities and research. The further it is from the technology frontier, the more advisable it is to invest in secondary and primary education. Countries located at the technology frontier have fewer chances for imitation and are forced to INNOVATE.

Francisco José Mora Más
Vice-rector for Planning and Innovation, Universitat Politècnica de València

Spanish education has made great strides since 1975. It has become as universal as public health, especially during the compulsory education age group, and now extends to every last child in the most remote village in the country. It has also become very affordable, even at third level, with a similar economical university offer in practically all regions. This social triumph, of which we should be rightly proud, needs to be pushed forward yet again if it is to fulfil its mission: to prepare the population for adult life, coexistence and work. With a socio-economic context that has changed radically and suddenly, leaving five million people on the dole queue, we must react fast. Technology, languages and differences in the costs of resources in developing countries have allowed globalisation of high-value services. As a result, the right to work is now threatened in advanced economies and may soon jeopardise coexistence. We must commit ourselves as soon as possible to the knowledge economy, in which knowledge is the common currency, and the way in which we use it marks the difference between work and unemployment.

Education is of key importance in reinforcing the knowledge economy. The measures proposed must always set their sights on the medium term, without turning their backs on the short-term future. The following are four examples of measures that we at Accenture propose:

1. Incentivise studies that are most relevant for the knowledge economy, where innovation and scientific knowledge are critically important. University degrees and technical studies in science, engineering, mathematics, etc., have a differential value which the education system should reward economically and stimulate socially, among both students and teachers.

2. Increase the appeal of vocational education, more clearly demonstrating the link between trades and employment, dignifying these studies socially and selling the prosperity they can provide to the people who study them.

3. Specialise universities, overcoming the "one size fits all" notion which has been so socially positive but which now needs to be replaced by super-specialisation. Following the path of our leading businesses schools, Spanish universities must generate world-class competitive professionals and attract students from other countries who will turn round the trend of exporting highly qualified students.

4. Mentalise individuals, the true protagonist of this revolution and the object of the education. Everyone must be aware of his or her competitive position at a world level, know what is most in demand at any time and submit to the "gymnastics" routine of learning and re-learning. If as a society we are capable of raising the rate of lifelong learning –currently one of the lowest in Europe– we will be on the right path.

It's always easier to say what needs to be done than do it. In our sector, what we describe has been going on for years and we know that the reaction of business and individual reaction is a complex one. It was only a question of time before it would affect society as a whole and we hope, for the good of Spain, that we have learnt the lesson, that we become more aware and take action while there is still time. Our future as a society is at stake.

Diego Sánchez de León
Head of Accenture's Talent & Organization Performance Unit for Europe, Africa, the Middle East and Latin America.

Spain has come a long way. Forty years ago, when schooling up to the age of 14 was made compulsory[102], there were two and a half million illiterates in Spain, and half a million university students. Today, there are more than half a million illiterate (around 840.000) and five million university students[103]. This advance has placed Spain's school expectancy at 17.2 years, only a short distance behind the OECD average of 17.8 (see Illustration 19).

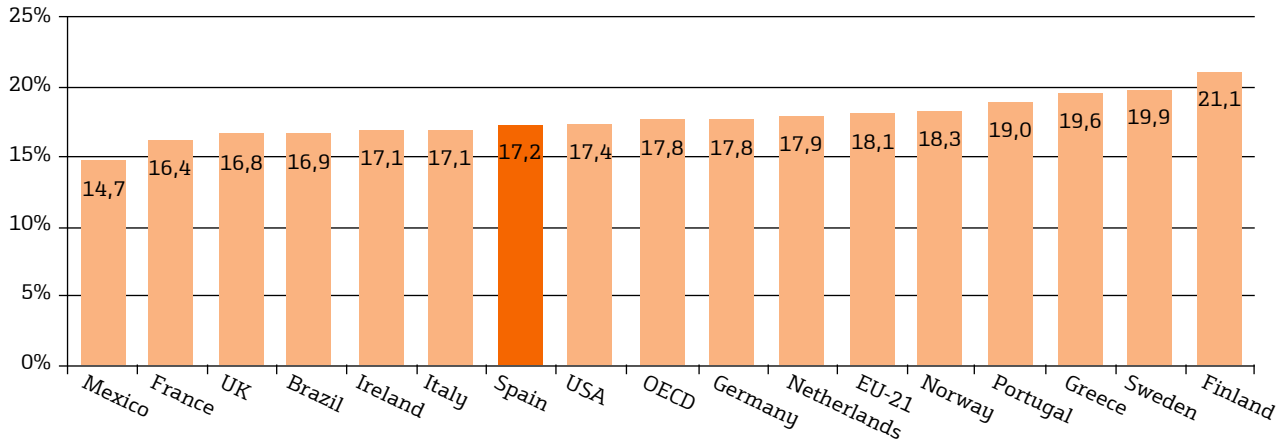


Illustration 19: School expectancy (2009): Expected duration of formal education under current conditions (from the age of five onwards).
Source: *Panorama de la educación según indicadores de la OCDE 2011*, Informe del Ministerio de Educación Español (2011).

However, despite these achievements, Spaniards themselves tend to be very critical of their own education system, aware that the country's universities do not feature in international rankings and that Spanish students score less than their European counterparts in PISA reports. However, as the poem says, "It depends on the prism through which you look at it".

On the one hand, Spain is certainly manage to replicate its appeal as a holiday destination in the academic field. It ranks among the top ten destinations with the greatest share of students studying higher education outside their own country, attracting 2% of the three million of young people who studied abroad in 2007. That is to say nearly 60.000 students, although that figure remains far behind from the top countries, including the United States, United Kingdom, Germany, France, Australia or Canada. The situation is even better among official masters' degrees, where foreign students now make up 23% of the total[104]. These figures are largely due to an interest among Spanish-speaking students, especially from Latin America, in studying in Europe.

At the same time, as we saw in a previous chapter, the PISA report itemises the determining factors in educational performance: 50% can be explained by family social background, 18% by the socio-economic make-up of the families of students at the school and 6% by the educational and organisational characteristics of the schools[105]. In other words, nearly 70% of performance depends on the pupil's

[102] This education system has since been replaced by another.

[103] «¿Crisis de la educación?», *El País* (enero 2008).

[104] "¿Puede ser España una potencia económica en educación?", *Expansión y Empleo* (March 2010).

[105] "¿Crisis de la educación?", *El País* (January 2008).

Spain already has an acute degree of "overeducation", with the result that many workers are overqualified for the work they perform

socio-economic background, thus absolving the schools from much of the blame generally laid at their doors. Moreover, averages can be deceptive: there are regions of Spain like La Rioja and Castilla y León that achieve the same qualifications as the world's best-educated countries.

And if you've been reading carefully, you will have realised that 26% of school performance is unexplained. The Bankinter Foundation of Innovation has a theory in this regard: perhaps such studies fail to evaluate certain skills that might turn some pupils into great professionals in the future. It is important to remember that PISA scores pupils only in areas such as mathematics, natural science and reading comprehension. But maybe more attention should be paid to skills such as creativity, innovation and critical capacity. Although 2010 Spain has dropped back to ninth place in the *The Big Won* ranking (an international platform that analyses the quality and creativity of advertising agencies and countries at the industry's leading trade events worldwide)[106], in 2008 it stood in fourth place internationally[107].

Chef Ferrán Adriá, businessman Amancio Ortega, artist Salvador Dalí, designer Cristóbal Balenciaga, film-maker Pedro Almodóvar and tennis player Rafael Nadal are just some of the Spaniards who have pushed the envelope of innovation and earned international acclaim as a result. Spain may not excel in more theoretical disciplines, but it could well exploit its vein of creativity. This requires considering the need to train people whose qualities lie in other areas by creating a university that focuses on promoting innovators and entrepreneurs.

In the field of business training, Spain can pride on having attracted the Washington Post group, owner of Kaplan, the world's second-largest education suppliers, which has bought over Structuralia, a Spanish training firm. Structuralia offers training, especially via e-learning and now *TV-learning*, to over 85,000 employees in more than 1,350 companies. In 2010, the company had turnover of €7 million[108].

What could Spain do to further incentivise such mergers and collaboration agreements and thus position the country as an international supplier in education? It could start by making it easier for non-national students to obtain visas and live in Spain. If the country is to capitalise on the talent its trains, it is especially important to retain it. This is likely to be problematic, especially in view of the large numbers of Spaniards on the dole queues. Unsurprisingly, the Spanish now rank unemployment as their primary concern. It will therefore be necessary to find more flexible working alternatives for different profiles and levels of study without becoming obsessed with producing BA and MA graduates. Spain already has an acute degree of "overeducation", with the result that many workers are overqualified for the work they perform[109]. As we have already discussed, solving such mismatches necessitates a closer relationship between Spanish universities and companies operating in the country, in order to adapt the undergraduates' education to the real needs of the employment world, or promote geographical mobility, given that there are people who prefer to accept a job below their qualifications, so they can stay in the city they live. Following the German example, vocational education —which suffers from a chronically low opinion in Spain— should be improved and promoted to make it an attractive option for students. Again, only close relations between vocational education and the business world can make this possible. It´s also necessary to increase the prestige of this type of education within spanish society.

[106] "España pierde peso en The Big Won", *El Publicista* (January 2011).

[107] "España: cuarta del Mundo en creatividad" (January 2009).

[108] "El grupo The Washington Post entra en el mercado educativo español", *Expansión.com* (June 2011).

[109] *Un análisis del desajuste educativo en el primer empleo de los jóvenes,* Marta Rahona López (Universidad Complutense de Madrid 2008).

Spain has the foundations to compete in creativity and innovation but still needs to "believe it" and start up initiatives to promote it

Many experts have warned of the impact of low labour mobility on the competitiveness of Spanish firms. This problem is a result of cultural factors and the nature of the Spanish property market, in which very few people choose to rent their homes. Although Spanish law does not precisely encourage mobility, the traditional inertia is being eroded by the crisis. An Infojobs survey shows that 70% of candidates would be well-disposed to moving home in the right conditions[110]. Will this increase in mobility prove to be a passing phase or a lasting change in Spanish society?

Collaboration between public bodies and the private sector is especially important in Spain, where much RDI is carried out, but most is not translated into tangible arrangements. The great problem is a lack of financing, which prevents patents from reaching the market. An effort also needs to be made to allow cities like Madrid and Barcelona to become specialist hubs for creativity and innovation. This will mean targeting a global market and developing programmes in other languages, such as English. The best way of augmenting the prestige of these centres is by incorporating internationally recognised lecturers and speakers and experts in particular state-of-the-art subjects.

Accenture and the Universidad Autónoma de Madrid have reached an agreement to establish a Chair in Economics and Innovation Management intended to encourage teaching, research and dissemination and exchange of knowledge in this area. This type of initiative provides an opportunity for researchers from universities that unfortunately lack recognition and practical application.

Finally, it is important to stimulate innovating and entrepreneurial activity by way of legal and fiscal incentives, as well as by providing aid and financing to ensure that money is no obstacle to the creation of new products, services and business models. The Global Entrepreneurship Monitor programme (GEM) ranks Spain as an "innovation-driven" country. According to the *Global Competitiveness Report* published by the World Economic Forum[111] such economies have evolved from being "factor-driven" (driven by natural and labour resources) and later efficiency-driven (capital-intensive business and economies of scale). As they advance through the innovation-driven stage, businesses become more knowledge-intensive and the services sector expands. Yet the impression remains that entrepreneurship is being hampered by excessive red tape; that there are few opportunities for starting a business, and that successful entrepreneurs receive no media coverage.

One might say that Spain has the foundations to compete in creativity and innovation but still needs to "believe it" and start up initiatives to promote it. It is time Spain got down forging a union between education and business to position the country clearly as a fertile terrain for innovating initiatives.

The time has come to commit to replacing our educational model with one that focuses on the individual and the knowledge that will enable us to change our production model. If we are to catch up with other European countries, a new arrangement is required, giving a central place to productivity; one that will enable us to grow and, at the same time, to adopt work/life balance measures that help families become involved in their children's education and thus contribute to the country's future. Working conditions in Spain, with their extensive working days and long lunch break and the seemingly small amount of time parents devote to their children's learning and personal development have a pernicious

[110] "La crisis empuja a los españoles a cambiar de residencia por un puesto de trabajo", *El Mundo* (February 2009).

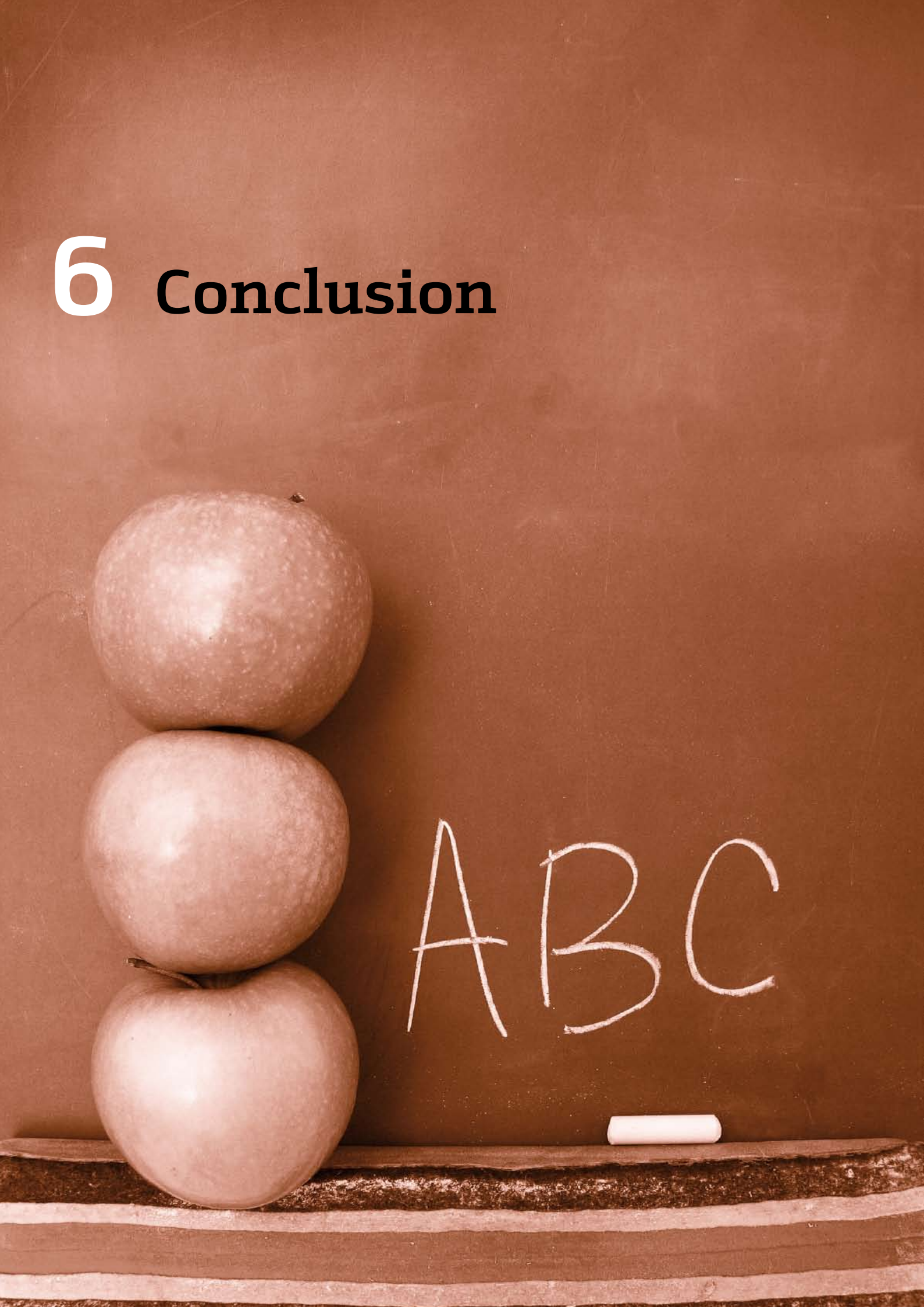
[111] Schwab, Klaus, ed., *The Global Competitiveness Report 2010–2011*, World Economic Forum, 2010.

effect on education. In business, the necessary changes have not been implemented in management culture and style to address the new situation faced by the majority of employees, now living in households with two working parents[112]. Few organisations have yet introduced real work/life balance policies, other than implementing the reduced working day imposed by law, which only extends until the children are aged eight. Indeed, 90% of Spanish managerial staff consider the reduced working day to be a hindrance to furthering their professional career.

If we want Spanish children and young people to grow up to be the citizens who improve the country in the twenty-first century, shouldn't we begin by becoming a culture that prioritises productivity and work/life balance? That starts with ourselves as parents, followed by our community (companies and education centres) and finishes up with our governments. The future of our country is being written every day in the classroom.

[112] "El 80% de los trabajadores de empresas españolas que tienen hijos demandan más medidas relacionadas con el cuidado de la infancia".

6 Conclusion



We are now setting the pace of a new century, with all its promises and its possibilities. We have access to resources and capacities that would have seemed impossible a few years ago. However, we face serious problems —a growing debt crisis, the threat of economic stagnation and recession, increased social inequality among nations, war, etc.— and these are hampering efforts to achieve the dream of universal high-quality education. Against this backdrop, the quality of a country's human capital will be a key positioning element in the new world power map that emerges out of the crisis.

The Future Trends Forum experts agree that there will be dramatic changes in the field of education (some are already visible) due to trends such as an unrelenting globalisation, the Internet, and mobile technology which provides free access to information and education. This new situation will require citizens of the world, multilingual and multicultural, with the capacity and an eagerness to learn and innovate and to adapt to change rapidly.

Is today's education helping to shape this type of citizen? Sadly, if we look at the disturbing school drop-out rates, high graduate unemployment, dissatisfaction among lecturers and a failure to match contents to the real economic situation, the answer is all too obvious. A reform of the educational system is urgent and requires a reappraisal of the system by all agents involved.

In recent years, the assumption that the state should be responsible for all aspects of education has been called into question. The debate on the role of government in education is likely to continue, but the various innovating initiatives that are now taking place on a global scale seem to indicate an acceptance of change, introducing new areas and models of collaboration for private management.

Companies need large doses of talent to successfully overcome the great challenges they now face. Knowledge is the new capital and the knowledge economy defines the new business community. Survival will depend on business's ability to promote continuous training. Moreover, companies will have to forge a closer relationship with the educational institutions, especially universities. Finally, corporate social responsibility declarations should include a commitment to a better work-life balance for employees, to allow them to play an active role in their children's education.

The involvement of families in their children's education is decisive to school success. This type of behaviour appears to be clearly linked to the family's socio-economic position. Given that this is the case, why has the debate on the crisis in education traditionally focused on the role of the state, schools or teachers in education, and ignored families and factors such as their socio-economic position?

In twenty-first century education, individuals now occupy center stage, taking responsibility for their own employability and education. With state coffers decimated and the business world concentrating on mere survival, individual proactivity to train and learn will be an imperative of the new situation.
Another prerequisite for improving the quality of education is to place the focus on teachers. Countries with the highest quality of teaching, as well as selecting the best graduates to be teachers, offer abundant practical training and support from colleagues to new teachers and encourage ongoing training. It is necessary to

adapt the way teachers are trained and selected to the new role they have to play, in which they cease to be transmitters of knowledge and become "facilitators" in the learning process.

NGOs play an essential role in driving the reform of education systems, working individually and in networks, in political dialogue, and creating new spaces to allow civil society to get involved in education.

The Future Trends Forum experts have drawn up a list of ten principles that should guide the reform of education systems:

1. Education must be universal, global and a priority for all nations.
2. Education must be democratised to make it affordable for all.
3. We must ensure that education inspires and motivates teachers, students and society.
4. Lifelong learning must be encouraged to ensure employability and the contribution of those who drop out of the formal education system.
5. Education systems must include work experience in business management that increases effectiveness, as well as encouraging an entrepreneurial spirit among students.
6. Education should not be limited to teaching academic knowledge, but should provide a comprehensive grounding that includes emotional intelligence, creativity, values, imagination, corporal expression, concentration, etc.
7. Personalization is a decisive factor for increasing quality.
8. One of the priorities must be to adapt the syllabus to the real socio-economic situation at any time.
9. Innovative methods need to be adopted to achieve a more attractive and effective education. Training on-line and via mobile devices improves access to and appeal of education.
10. Education must be collaborative and give a more active role to the primary agents (government, companies, parents, the individuals themselves, etc.).

In Spain, the last thirty years have seen major changes and modernisation in education. Reform of the education system must now be geared towards an ultimate goal: preparing the population for adult life, coexistence and work. To achieve this, we must commit ourselves as soon as possible to the knowledge economy, in which knowledge is the common currency, and the way in which we use it marks the difference between work and unemployment.

In short, the importance of education and knowledge in a global world is increasingly obvious. The quality of education depends not only on the quantity of resources, but, above all, on how they are used, how the system is organised and run, how teachers are trained and on the motivation and support of the social groups involved, especially families. Greater coordination is required between the educational area and other spheres of our society (companies, governments, families, individuals). An educational system is needed that achieves commitment and co-responsibility from all agents in education from the earliest childhood to old age, to make equal opportunities a tangible reality.

Appendix

- Members of the Future Trends Forum

Members of the Future Trends Forum

Speakers

Mr Gordon Freedman
Vice President for Global Education Strategy, Blackboard Inc.
Country: USA.

Mr Paul Howard-Jones
Senior Lecturer in Education, Cardiff University.
Country: United Kingdom.

Mr Joel Klein
CEO, Education Division and Executive Vice-President, Office of the Chairman, News Corporation.
Country: USA.

Mr Patrick Newell
Founder and Director, 21Foundation.
Country: Japan.

Mr Nitin Nohria
Dean, Harvard Business School.
Country: USA.

Mr Sridhar Rajagopalan
Managing Director, Educational Initiative.
Country: India.

Mr Diego Sánchez de León
Head of the Talent & Organization Performance Unit for Europe, Africa, the Middle East and Latin America, Accenture.
Country: Spain.

Ms Kiran Sethi
Founder and Director, Riverside School, Ahmedabad.
Country: India.

Mr Vandyck Silveira
CEO, IBMEC.
Country: Brazil.

Mr Kurt Squire
Professor, University of Wisconsin.
Country: USA.

Mr Steve Trachtenberg
President Emeritus, George Washington University.
Country: USA.

Mr David Weinberger
Senior Researcher, Harvard University.
Country: USA.

Mr Conrad Wolfram
Founder and managing director, Wolfram Research Europe.
Country: United Kingdom.

Mr Dali Yang
Professor of Political Science, founder and director, University of Chicago Beijing Center.
Country: USA.

Mr Stanley Yang
CEO, NeuroSky.
Country: USA.

Participants

Mr Fernando Alfaro
Trustee, Bankinter Foundation of Innovation.
Country: Spain.

Ms María José Alonso
Lecturer in pharmacy and pharmaceutical technology, Universidad de Santiago de Compostela.
Country: Spain.

Mr Gotzon Bernaola
Director of education programmes, Innobasque.
Country: Spain.

Mr Carlos Bhola
Partner, Celsius Capital and co-founder, Kikin.
Country: USA.

Mr Ángel Cabrera
President, Thunderbird School of Global Management.
Country: USA.

Mr Hong Chen
Founder, Chairman and CEO, Hina Group.
Country: China.

Mr Ricard Garcia
Lecturer in Chemical Engineering, Universitat Rovira i Virgili.
Country: Spain.

Mr Richard P. Kivel
President, MIT Enterprise Forum and CEO, Rhapsody Biologics.
Country: USA.

Mr Joel Kurtzman
President, Kurtzman Group.
Country: USA.

Ms Julia Li
CEO, HCD Global.
Country: China.

Ms Carmen Medina
Specialist leader, Deloitte.
Country: USA.

Mr Emilio Méndez
Director, Center for Functional Nanomaterials.
Country: USA.

Mr Francisco José Mora
Vice Rector for Planning and Innovation, Universitat Politécnica de Valencia.
Country: Spain.

Mr Juan José Moreno
Director General of University Policy, Ministry of Education.
Country: Spain.

Mr Tan Chin Nam
Chairman, MDA international advisory panel.
Country: Singapore.

Mr José Manuel Páez
Vice-rector of international relations, Polytechnic University of Madrid.
Country: Spain.

Mr Shai Reshef
Founder and President, University of the People (UoPeople).
Country: USA.

Mr Javier Santiso
Director of innovation funds and seed capital, Telefónica.
Country: Spain.

Ms AnnaLee Saxenian
Dean and professor, School of Information and professor in the Department of City and Regional Planning, University of California, Berkeley.
Country: USA.

Ms Francine Trachtenberg
Independent Professional.
Country: USA.

Ms Karen Wilson
Senior fellow, Kauffman Foundation.
Country: USA.

Mr Adrian Wooldridge
Management Editor, *The Economist*.
Country: United Kingdom.

Mr Po Chi Wu
Lecturer, University of Hong Kong.
Country: USA.

Ms Connie Yowell
Director of Education, MacArthur Foundation.
Country: USA.

Foundation

Mr Juan Rosas
CEO.
Country: Spain.

Ms Andreea Niculcea (up to the date of this study)
Executive.
Country: Romania.

Ms María Teresa Jiménez
Executive.
Country: Spain.

Ms Irene Ibarra
Executive.
Country: Spain.

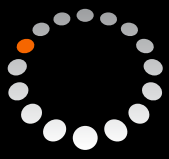
Bankinter

Ms Marce Cancho
Controller, Bankinter Foundation of Innovation.
Country: Spain.

Principal contributors to the publication

Eva López Suárez
Manager, Talent & Organization Performance, Accenture.
Country: Spain.

Cynthia Gregsamer
Consultant, Talent & Organization Performance, Accenture.
Country: Spain.



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