

# THE VIRTUAL UNIVERSITY

Models &  
Messages

Lessons from  
Case Studies

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The new century: societal paradoxes  
and major trends

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# 1. An era of paradoxes

At the beginning of a new century, the world is caught in powerful cross-currents and many of the predominant trends manifest themselves in seemingly contradictory ways.

## **Wealth and poverty**

Never before in human history has so much wealth been created so fast. Never before in human history have so many had it so good in terms of housing, food, comfort or the use of new technologies. Today, even in low-income groups large numbers of people have access to running water, electricity, healthy nourishment, vaccines and television, and are better off than the middle class of a century ago. Wealth is increasing, but so is inequality. Economic growth is rapid, but inequalities are widening. Wealth is increasing, but poverty is persistent and misery endemic. The privileged millions often live just next door to the millions who are deprived.

## **Better health but new threats**

For large numbers of people, the twentieth century was the century of public health. Never before have so many survived infancy or lived so long; never before have so many led such healthy lives. Much of this progress has been achieved outside the health sector, through economic growth, nutritional advances, improvements in sanitation and educational gains. In addition, medicine has made unprecedented strides, developing vaccines, antibiotics and cures. The twentieth century was the century of conquering contagious diseases. Smallpox was eradicated and polio is almost gone; but these gains in health have not been uniform. And new diseases, such as HIV/AIDS, have taken a terrible toll. The gains in health have been astounding, but factors such as those above foreshadow a grim future of mounting disease and death in countries whose health systems are already overburdened and whose social systems are already strained.

## **Technology gain and technology gap**

Technology, and the research on which it rests, is both civilizing and inspiring: civilizing because it makes it possible to live with less drudgery and disease and with more time for leisure and culture; inspiring because it increases our capacity to nourish and heal, to prolong life and make living easier. New products are being introduced at a more rapid rate than ever, and increasingly, whether they are genetically modified seeds or new tools like the Internet, they are the fruits of comprehensive scientific research. But although innovations and patents are increasing faster than ever, the benefits of technology are drastically skewed from one group and nation to another, as are the negative spillovers from many applications of technology.

## **Control over nature but environmental degradation**

Never before have humans had such knowledge about and control over nature, over its elements, forces and species. Science and technology have increased the scope of our understanding and ability to intervene. Humans can tap numerous resources and can build powerful machines; but while the application of this knowledge has certainly improved material welfare, it has often created severe and harmful side effects. Knowledge of and control over nature have increased, but human interventions have also had profound, unintended and potentially life-threatening effects on the environment, which have also

generated conflicts between groups and nations. These consequences increase the need not just for more knowledge, but also for greater appreciation of the whole web of cause and effect, and the need to make more ethically informed decisions.

### **Gender: improved conditions but persistent differences**

During the last century women have gained more in rights, health and influence than in any previous century. Yet gender equality does not automatically follow growth in national income. Differences in access to higher positions, wages earned, the impact of divorce are all still manifest, in some countries grossly so. International trafficking in women has increased. Gender inequality greatly detracts from the welfare of girls and women and, indirectly, from that of boys and men. On the other hand, empowering women increases a society's capacity to reduce poverty. Although great strides were made in advancing women's rights in the last century, there are still great gaps between men and women in the productive resources they control and in the institutional environments which shape their opportunities, choices and behaviour.

### **Democratization and disenfranchisement**

The twentieth century was one of increasing popular influence over political and other institutions. Never have so many countries had functional democracies. During recent decades democratic governments have emerged in Latin America, Africa and Asia, while in Europe, since the fall of the Berlin Wall, a number of countries have been added to those where people can exercise political choices as citizens and not just be forced to obey their leaders as subjects. Although the gain in rights has been extensive and political systems have become more participatory, infringements on basic human rights are widespread, millions are still disenfranchised and many political regimes remain repressive.

### **Education, but not for all**

Literacy – to be able to read and write – used to be the privilege of a few, restricted to scribes or officials. Now it is among the basic human rights. Today education comprises more years of life, more days per year and more hours per day for more people than at any time before. Free education is a human right for all, but not a reality for all. Millions remain illiterate, many of today's children will never go to school, and the danger is that inequalities within and between societies will widen with the encroachment of today's expensive new technologies. Great strides have been made, but the gaps are widening.

### **Education: the critical nexus**

A key insight with respect to all the paradoxes and inequities listed above is this: education is the critical common component. To provide skilled workers, administrators, technicians, engineers, doctors and nurses, indeed, to manage all sectors of the modern economy by applying advanced knowledge, a well-functioning education system is mandatory and higher education has an important role to play.

## 2. A changing educational environment: three major trends

There are three overarching trends that affect the environment within which education systems operate. First, dramatic *demographic changes* are under way in the size, habitat and composition of the world's population. Equally vast changes are altering relations among the world's peoples. Secondly, the world is at a watershed: it is entering an era of new technological, economic and political organization with *globalization* as the transforming force. New technologies are changing social relations at the macro level between nations and institutions, as well as at the micro level between individuals and groups. But new technologies can also generate new inequalities. Finally, *knowledge* is being accumulated and converted into new applications and new wealth at a faster rate than ever before. A country's ability to produce and disseminate knowledge is decisive for its development. But access to the new knowledge is unequal and the gaps between nations are widening.

These three developments are changing the educational environment; but at the same time, education is changing the environment. Indeed, the greatest challenge is to reshape education systems in time so that societies can chart their own futures and not be overwhelmed either by the prevailing long-term trends or by short-term turbulence.

### 2.1 The new demography

The demographic composition of a country or region exerts a strong influence on the access to and provision of education. Moreover, its demographic composition interacts with social factors to shape both the supply of and demand for education, although in different ways in different regions and countries.

#### Increasing world population

Only a few decades ago the population explosion was seen as a major threat to global development; but the demographic transition – lower death rates followed by lower birth rates – has taken place more rapidly than expected. However, even with slower growth rates, a majority of developing countries will experience large absolute increases in population. Their populations are predominantly young, resulting in many more births than deaths. This trend will put great strain on social services in general and education in particular since it is the least developed countries that have to accommodate the largest increases in numbers of students. On the other hand, ageing populations in industrialized countries will put pressure on their pension programmes and medical systems, particularly where life expectancy is rising at the same time as fertility drops.

#### Urbanization

In this new millennium and for the first time in human history, the majority of the world's population will live in cities. This development will take place in all regions of the world, but mostly in the South where it will entail vast new expenditures to provide urban services like water, sanitation and transport. Rapid urbanization will produce many new burdens as well as new inequalities. The huge 'mega-cities' with their 'mega-problems' – disenfranchised poor, many living in slums without adequate housing, sanitation, energy or water – will dominate this century, much the way the nation-state dominated the last.

## **International migration**

International migration is increasing. Most of it – about two-thirds – takes place between developing countries. It clearly outnumbers the immigration from developing to industrialized countries. Many industrialized countries have over recent decades adopted more restrictive policies towards untrained immigrants, but have established special quotas for professionals deemed in short supply. It is estimated that by the mid-1980s 100 million people were living outside their countries of birth or citizenship and the number has been rising ever since.

The most common reason for migrating is poor economic prospects, but the desire to escape oppressive political conditions is also important. The result is greater cross-cultural mixing and exchange of experiences.

## **Ageing**

Over the last two centuries there has been a dramatic increase in life expectancy, although at different rates and times in different countries. The percentage of people over 65 is highest in industrialized countries: in twenty-five years it will increase to 22 per cent in Europe and approach 30 per cent in Japan. But it has also increased in developing countries where, by the end of the century, the number of people over age 65 will be greater than the number under age 15. The changing structure of the population pyramid poses several challenges to the education system. With an increasing dependency ratio the working population must be productive enough to ensure its own welfare, that of its children and of the retired. A larger part of the labour force must be trained for more productive jobs.

## **New diseases and old scourges**

Dramatic differences in health are evidence of the divide between rich and poor, in life expectancy, exposure to diseases, availability of treatments and vaccines. With globalization, vulnerability to infections increases in all countries, for bacteria and viruses travel as fast as humans. Each year one-tenth of humanity crosses international borders. Yet the poor suffer disproportionately from communicable diseases because they do not have access to cures or other means to prolong their lives. The circle is vicious: lower health not only is the result of poverty, but maladies such as TB, malaria, HIV/AIDS and childhood diseases, as well as non-communicable illnesses, are causes of poverty.

## **Demographic challenges to education**

Demographic changes are posing several major challenges to education, which is being asked to provide:

- education for more in the developing countries, but education for shrinking numbers in many other countries;
- education of better quality, at all levels;
- expanded educational opportunities after basic education;
- education for urban jobs;
- multicultural education for multi-ethnic societies;
- educational opportunities addressing the needs and demands of the growing numbers of older citizens.

## 2.2 Globalization

Globalization is the increasing flow across borders and boundaries – whether national, economic, cultural, technological, or institutional – of people, goods, services, ideas, information, images and values. There is no choice, it is already here, as a defining worldwide force and consequence of the rapid and inexorable movement of technologies, markets, policies and destinies. Globalization is a mixed blessing, encompassing promises as well as threats. It can mean modernization, but also marginalization. It can raise standards of living, but also increase exploitation, threaten the environment and destroy communities. It has brought impressive gains in welfare, but also distressing increases in inequality.

The divide between the haves and the have-nots has widened over recent decades. People in poor countries have been able to acquire fewer and fewer of the new goods consumed and used by the people in the rich countries, including many medicines. Poor people and poor countries remain vulnerable, so that when crises occur, the damage spreads faster and farther among poor people and poor countries than elsewhere.

Although globalization may not be a choice, the kind of globalization that evolves is. Inequity is not inevitable. Presently there is an institutional mismatch between the reach of old-order nation states and the reach of global markets. Globalization has already had major impacts on the organization of education, how it is planned, provided and paid for. But the humanizing of globalization depends on education: who gets it, how much, what kind and in what form.

### Technologies

Globalization is characterized not only by increasing use of the same technologies all around the world – everything from cars to medicines – but also by the increasing interconnectivity of technologies. The integration of technologies also entails the integration of countries, through the rapid expansion of global networks used by nations, organizations and individuals. Digital communication is becoming the Esperanto of the twenty-first century.

### Economic exchange

Not only are knowledge and technology changing, so is the social organization built around them. The economy itself is globalized by new patterns of world trade, the integration of financial markets and internationalization of companies. Globalization is not just changing the world economy, it is altering the conditions for all national economies and their internal organization. Concentration of wealth implies concentration of power. Globalization increasingly makes education an international commodity, with services provided by new competitors.

The demand for qualified people that knowledge economies depend on is also becoming globalized. More and more, capital is following competence as nations seek to harness the same talent. Labour markets commonly stretch across national boundaries. New jobs increasingly depend on innovations. Migration is a selective phenomenon, with bigger obstacles for some educational groups than others. The biggest movement of trained talent is from the developing countries to the most advanced industrialized ones; what is ‘brain drain’ for the former is a ‘brain gain’ for the latter.

### Political integration

Globalization is also about the expanding reach of international courts and human rights, including education as a human right. It is about the globalization of rules of law, of systems

of exchange and principles of contract. Political integration takes place not just at the regional level, such as the European Union and similar associations on other continents, but also through the varied activities of the United Nations system. The World Trade Organization is slowly establishing the same rules not just for transactions on international markets, but for the organization of domestic economic activities – including education – as well.

## **Culture**

Globalization is not only transforming the physical world, but the mental world as well, by disseminating ideas and creating more similar mindsets and values. Global changes are also being felt in the everyday lives of individuals. The same products are increasingly found everywhere. Education can be ordered and provided via the Internet. International standards are increasingly being adopted for an ever-expanding range of activities.

An important part of globalization is the penetration of market principles and ideology into a wider range of institutions, notably to education. These principles are transforming educational systems and policies around the world. They also impact strongly on the role of the state and public sector in education.

Hence globalization will only accelerate the homogenization of lifestyles, reducing cultural variety and threatening the diversity of human expression – unless these uniforming tendencies are counteracted by policies to preserve the rich and multifarious heritage of humankind. A key mission of UNESCO is to use education to preserve and stimulate variety and enrich culture in a way that furthers equity and promotes development.

## **The educational challenges of globalization**

The global gaps in educational opportunity are enormous, and reducing them is a staggering task. Among the other important challenges are:

- reducing inequalities, poverty, marginalization and exclusion;
- establishing better links between education and the local economy, and between education and the globalizing world of work;
- preventing the growing role of market-driven research and education from widening the technology and knowledge gaps between industrialized and developing countries;
- ensuring that the research requirements of developing countries receive the necessary attention and can be addressed by their own scientists and scholars;
- reducing negative impacts of the brain drain from the poor to the rich countries and from disadvantaged to advantaged regions as the market for students also becomes globalized;
- addressing the impact of market principles and the changing role of the state on education and their bearing on the planning and management of education;
- using the education system itself not just to transmit the general body of science, which can be used in all places, but also to preserve variety and the richness of world heritage – languages, artistic expressions, lifestyles – in a world becoming more homogeneous.

## **2.3 Knowledge growth**

The development and dissemination of new science-based knowledge has become the most potent force of social change. Information and communication technologies (ICTs) are not just new branches in the economy, they are transforming all other activities, from taxi services to distance education, from industrial production to news transmission.



## **Information technology**

The Internet is at the heart of the second wave in the information revolution. It has totally changed the way knowledge is stored, spread, obtained and used. Boundaries between branches of the economy are being erased: a switchboard has become a computer; newspapers are read via satellites, a PC has become a small post office and a music box.

But information is not the same as knowledge. It takes knowledge not just to provide all the new information, but to apply it usefully and imaginatively as well.

The world has never had so many and varied resources. Yet half of humanity remains poor. More than that, there is also a widening gap between information-rich and information-poor societies in their access and control over the technologies that are driving the global infrastructure and technologies.

## **A definition of development**

The increasing role of knowledge in today's world has direct implications for the way we conceive of development. Indeed, development must be defined in terms of knowledge and the humane uses to which it is put. Put most simply, development can be measured by the capacity a country has to acquire, use and transmit knowledge, in other words, by its capacity for knowledge management in the broadest sense of the word. A society's wealth and welfare are decided by its capacity to train and educate its people to share in making and applying knowledge in all spheres of life.

Information technologies change not just the way students can be taught but also the ways in which education is provided and the content of training and research. ICT is increasingly becoming part of training in schools; it is an expanding channel for distance education and a new opportunity for potent actors, private as well as public, at the national as well as the international level. The key task is to harness the new information and communication technologies in order to build knowledge societies in states that are now poor, and to develop the education and skills, the science and humanitarian culture on which they must be based.

## **The educational challenges of the growing role of knowledge**

The educational challenges of the growing role of knowledge are severe. Among the most important are:

- reducing the widening digital divide between rich and poor nations, lest the know-nots remain have-nots;
- making access to learning and educational resources via the Internet more equal among countries, but also making more equal the capacity to supply such education;
- increasing the number and proportion of people with a capacity to access and transmit the new knowledge being created, which requires large investments in higher education and specialized training;
- increasing the number and proportion of people who can apply and advance knowledge – what others take an interest in – so they can gain access to creative knowledge networks;
- preventing poor countries from becoming mere spectators and passive recipients of innovations developed in the industrialized world by boosting their capacities to contribute;
- matching the expanding possibilities for new applications of knowledge with ethical reflection and restraint;

- fostering economic and technological transformations that at the same time are compatible with sustainable development and human fulfilment.

### 3. An increasing role for institutions of higher education

This publication focuses on universities, institutions that play an important role in society. Universities provide the personnel that run and operate the key institutions of society – the civil service, corporations and organizations. Institutions of higher education also train most teachers, hence higher education is an integral part of providing education for all. More than that, universities are essential institutions for generating the new knowledge that is the defining mark of modern societies. Governments increasingly consult universities for solutions to pressing problems, such as the finding of treatments for diseases or models for monitoring global warming. Firms and industry also increasingly turn to universities for the cutting-edge knowledge needed for new patents, goods and services. Research results increasingly provide the critical input for innovations in all fields of human endeavour, and hence for all productive activities, from agriculture to electronics.

The impact of *demographic changes* on institutions of higher education has been and will be great. The history of higher education over recent decades is the history of expansion, a changing composition and structural diversification. From being institutions for the training of the select few – mostly males – the number of students has expanded rapidly.

Not only have institutions grown, they have diversified to accommodate an ever-larger share of the young. In the coming years growing numbers will seek admission, and the social make-up of the student body in many countries will change. This expansion of enrolment and diversification of institutional arrangements is accompanied by new types of external clientele for higher education as well as by new sources of funding and modes of management.

Without adequate higher education and research institutions providing a critical mass of skilled and educated people, no country can ensure genuine endogenous or sustainable development and, in particular, developing countries and the least developed countries cannot reduce the gap separating them from industrially developed ones. At the same time, higher education is being challenged by new opportunities relating to technologies that are improving the ways in which knowledge can be produced, managed, disseminated, accessed and controlled. Equitable access to these technologies should be ensured at all levels of educational systems.

The increasing number of students and types of institutions, the growing complexity of institutional and financial arrangements, all raise new challenges for the design, planning and management of institutions of higher education.

*Globalization* impacts strongly on institutions of higher education. Universities are pre-eminently global institutions. Science increasingly provides universally shared views of the world and the technical languages for describing them. Knowledge is the most international of commodities; indeed, in many respects it is an international public good.

Globalization not only implies rapid internationalization of research, but also growing numbers of students who enrol at tertiary-level institutions abroad. In the last half-century the number of exchange programmes has grown and financing has improved. Over the past decade, the flow of students across borders has been very much amplified by universities – public as well as private – offering education to foreigners as a commercial activity with great economic potential. A global market in higher education is rapidly developing, affecting

curricula and research agendas, but also standards, accreditation and quality assurance. Indeed, the World Trade Organization has become one of the interested parties.

Commercialization of education carries risks: by diverting attention from the classical task of higher education, by accumulating advantages in the most advanced countries and most advantaged institutions, and by discriminating against the most deprived and creating brain drain from poor countries.

If demographic changes and globalization have important impacts on institutions of higher education, the *growing role of knowledge* will affect them even more. The driving force of globalization is the expansion of new learning economies. Their key characteristic is the systematic enriching of new products and services by scientific knowledge.

Universities have grown and changed as a consequence of the knowledge they themselves have produced; supply has created its own demand. The most prominent examples are found in the new information and communication technologies, which are transforming all fields of science. Institutions of higher learning have been at the cutting edge in developing them and are at the forefront in using them: for research, innovations in teaching and in methods of management.

This holds not just for all areas of research but for teaching as well. Students can, via the Internet, enter language laboratories or sites on the construction of pyramids or take part in the classification of asteroids. The Internet has improved access to knowledge and it has reduced the costs of transmission. But access is grossly uneven and concern about a 'digital divide' is growing both within and between countries.

Higher education has a pivotal role to play in the renewal of educational systems and development in general, because of its role and the influence of its institutions and programmes on all societal activities.

This chapter is based on the *Medium-Term Plan 2002–2007* of the UNESCO International Institute for Educational Planning, which is available on the Internet at <http://www.unesco.org/iiep/>.