

# Lifelong Learning in the Global Knowledge Economy: *Challenges for Developing Countries*

*A World Bank Report*



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# Foreword

The emergence of the global knowledge economy has put a premium on learning throughout the world. Ideas and know-how as sources of economic growth and development, along with the application of new technologies, have important implications for how people learn and apply knowledge throughout their lives.

Lifelong learning is becoming a necessity in many countries. It is more than just education and training beyond formal schooling. A lifelong learning framework encompasses learning throughout the lifecycle, from early childhood to retirement, and in different learning environments, formal, nonformal, and informal. Opportunities for learning throughout one's lifetime are becoming increasingly critical for countries to be competitive in the global knowledge economy.

Lifelong learning is education for the knowledge economy. Within this lifelong learning framework, formal education structures—primary, secondary, higher, vocational, and so on—are less important than learning and meeting learners' needs. It is essential to integrate learning programs better and to align different elements of the system. Learners should be able to enter and leave the system at different points. The learning system needs to include a multitude of players, such as learners, families, employers, providers, and the state. Governance in the lifelong learning framework therefore involves more than just ministries of education and labor.

Consideration of lifelong learning extends the World Bank's traditional approach to education, in which subsectors are examined in isolation. In 1995 *Priorities and Strategies for Education* emphasized the need to look at the education system in a more holistic manner. The 1999 *Education Sector Strategy* discussed the role of new technologies. In 1999, when he articulated the *Comprehensive Development Framework*, World Bank President James Wolfensohn referred explicitly to lifelong learning as a part of what education means for poverty alleviation. In 2002 the World Bank completed important new policy work on tertiary (higher) education reforms as well as a vision paper on the role of science and technology. This report

represents the Bank's first attempt to lay out an analytical framework for understanding the challenges of developing a lifelong learning system.

The World Bank's involvement in lifelong learning is still at the conceptual stage, but two new projects—in Romania and Chile—have already been prepared to address the need for continuing education and lifelong learning. In the years to come we expect to conduct more analytical work on lifelong learning, and the policy dialogue in education will touch more and more on lifelong learning issues. Our lending program will undoubtedly involve operations to support countries' efforts to transform their education systems to reflect a lifelong learning approach. This report provides a departure point for these continuing discussions.

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# Preface

This report explores the challenges to education and training systems that the knowledge economy presents. It outlines policy options for addressing these challenges and developing viable systems of lifelong learning in developing countries and countries with transition economies. It addresses four questions:

- What does a national education and training system, including its formal and nonformal components, need to do to support knowledge-based economic growth?
- How can developing countries and countries with transition economies promote lifelong learning, and what challenges do they face in doing so?
- Given limited resources, what type of governance framework promotes lifelong learning for people in general and disadvantaged groups in particular?
- How can financing of lifelong learning be inclusive, affordable, and sustainable?

The report provides a conceptual framework for education-related lending activities reflecting the latest knowledge and successful practices of planning and implementing education for lifelong learning. It encourages countries to look beyond traditional approaches to education and training and to engage in a policy dialogue on the pedagogical and economic consequences of lifelong learning.

This is a consultative document, on which the World Bank welcomes comments. Readers should send their comments to the Education Advisory Service, 1818 H Street, NW, Washington, D.C., 20433, United States, or e-mail them to [eservice@worldbank.org](mailto:eservice@worldbank.org). The World Bank hopes that this report will encourage discussion within developing countries and countries with transition economies.



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## Executive Summary

A knowledge-based economy relies primarily on the use of ideas rather than physical abilities and on the application of technology rather than the transformation of raw materials or the exploitation of cheap labor. Knowledge is being developed and applied in new ways. Product cycles are shorter and the need for innovation greater. Trade is expanding worldwide, increasing competitive demands on producers.

The global knowledge economy is transforming the demands of the labor market throughout the world. It is also placing new demands on citizens, who need more skills and knowledge to be able to function in their day-to-day lives.

Equipping people to deal with these demands requires a new model of education and training, a model of lifelong learning. A lifelong learning framework encompasses learning throughout the lifecycle, from early childhood through retirement. It encompasses formal learning (schools, training institutions, universities); nonformal learning (structured on-the-job training); and informal learning (skills learned from family members or people in the community). It allows people to access learning opportunities as they need them rather than because they have reached a certain age.

Lifelong learning is crucial to preparing workers to compete in the global economy. But it is important for other reasons as well. By improving people's ability to function as members of their communities, education and training increase social cohesion, reduce crime, and improve income distribution.

Developing countries and countries with transition economies risk being further marginalized in a competitive global knowledge economy because their education and training systems are not equipping learners with the skills they need. To respond to the problem, policymakers need to make fundamental changes. They need to replace the information-based, teacher-directed rote learning provided within a formal education system governed by directives with a new type of learning that emphasizes

creating, applying, analyzing, and synthesizing knowledge and engaging in collaborative learning throughout the lifespan. This report describes several ways this can be done.

### **Creating a Labor Force Able to Compete in the Global Economy**

In traditional industries most jobs require employees to learn how to perform routine functions, which, for the most part, remain constant over time. Most learning takes place when a worker starts a new job. In the knowledge economy, change is so rapid that workers constantly need to acquire new skills. Firms can no longer rely solely on new graduates or new labor market entrants as the primary source of new skills and knowledge. Instead, they need workers who are willing and able to update their skills throughout their lifetimes. Countries need to respond to these needs by creating education and training systems that equip people with the appropriate skills.

#### *The private sector is playing a growing role in education throughout the world*

Traditionally, the public sector provided most education services. Today that is changing. In many middle-income countries, the private education sector is growing, fostered by the poor quality and coverage of public education and the need to relieve fiscal burdens and promote innovation. Since 1995 the number of students enrolled in higher education in Brazil has grown more than 70 percent, with most of this increase occurring in private colleges and universities, which now account for 71 percent of higher education enrollment. In China 500 new institutions of higher learning were established between 1995 and 1999.

The private education sector is growing rapidly in countries with transition economies as well. Poland alone has 195 private higher education institutions, which educate more than 377,000 students. Private business schools—unheard of in Eastern Europe 10 years ago—are also thriving: in 1998 there were 91 private business schools in Poland, 29 in the Czech Republic, 18 in Romania, and 4 in Bulgaria.

At the same time, new providers—private sector trainers, virtual universities, international providers, corporate universities, educational publishers, content brokers, and media companies—have arisen to complement and challenge traditional institutions. This growth of the

private sector reflects the rising demand for more and better education as well as dissatisfaction with the traditional education and training system.

*Spending on training has increased dramatically*

Corporations are spending more and more on training to become or remain competitive in the global knowledge economy. Worldwide, annual corporate training expenditures reached \$28 billion in 2002, up from \$18 billion in 1997.

**Transforming Learning to Meet  
Learners' Lifelong Needs**

Being successful in the knowledge economy requires mastering a new set of knowledge and competencies. These include basic academic skills, such as literacy, foreign language, math, and science skills, and the ability to use information and communication technology. Workers must be able to use these skills effectively, act autonomously and reflectively, and join and function in socially heterogeneous groups.

*Many countries have not been successful in  
providing people with knowledge and competencies*

Education is inadequate in most developing countries. Coverage is insufficient, access is inequitable (especially in tertiary education and in employee and adult training), and the quality of education is poor. Adult literacy rates are low, and too few children complete basic education. International assessments of secondary school students in math and science show countries with developing and transition economies trailing significantly, especially when students are tested on their ability to apply and use knowledge.

In the transition economies of Europe and Central Asia, the quality of education is inadequate and the education system is too rigid. Rote learning, exam-driven schooling, and the soaring cost of private education have long been policy concerns in some Asian countries.

*Traditional education methods are ill suited to  
providing people with the skills they need*

The traditional learning model differs from lifelong learning methods in important ways:

<i>Traditional learning</i>	<i>Lifelong learning</i>
<ul style="list-style-type: none"> <li>• The teacher is the source of knowledge.</li> <li>• Learners receive knowledge from the teacher.</li> <li>• Learners work by themselves.</li> <li>• Tests are given to prevent progress until students have completely mastered a set of skills and to ration access to further learning.</li> <li>• All learners do the same thing.</li> <li>• Teachers receive initial training plus ad hoc in-service training.</li> <li>• “Good” learners are identified and permitted to continue their education.</li> </ul>	<ul style="list-style-type: none"> <li>• Educators are guides to sources of knowledge.</li> <li>• People learn by doing.</li> <li>• People learn in groups and from one another.</li> <li>• Assessment is used to guide learning strategies and identify pathways for future learning.</li> <li>• Educators develop individualized learning plans.</li> <li>• Educators are lifelong learners. Initial training and ongoing professional development are linked.</li> <li>• People have access to learning opportunities over a lifetime.</li> </ul>

### *Teacher training needs to change*

This new learning context implies a different role for teachers and trainers. Teachers need to learn new skills and become lifelong learners themselves to keep up to date with new knowledge, pedagogical ideas, and technology. As learning becomes more collaborative, so too must teachers’ professional development, which needs to promote professional networks and learning organizations within schools and institutions.

### *ICTs can support changes in pedagogy and teacher training—given the appropriate policy framework*

Information and communication technologies (ICTs) can facilitate learning by doing (through computer simulations, for example). They can vastly increase the information resources available to learners, thereby changing the relationship between teacher and student. They can facilitate collaborative learning and provide rapid feedback to learners.

These outcomes do not emerge simply through the introduction of computers into the learning setting, however. An appropriate policy framework is needed in which ICTs are used to tackle educational problems; significant investment is made in training teachers and managers to change their knowledge and behavior; qualified technicians and support staff are available; and funding for maintenance, access to the Internet,

and upgrading is sustainable. These conditions are rarely met, especially in developing countries.

*Formal education institutions need  
to become more flexible*

An increasing number of tertiary institutions are offering part-time, evening, weekend, and summer courses to meet the needs of working adults. In Finland the number of adults enrolled in continuing education programs at the tertiary level exceeds the number of young people enrolled in traditional degree courses.

Distance education is one way in which countries can offer more flexible learning opportunities. Many countries use interactive radio instruction in basic education. Mexico uses television to educate about 15 percent of its lower secondary school students. In the 1990s the National Teachers Institute in Nigeria graduated more teachers through its distance learning program than all other programs in the country combined. The Internet is beginning to transform higher education and corporate training. In 1999, for example, 92 percent of large corporations in the United States piloted Web-based training programs.

### **Governing a Lifelong Learning System**

To create effective lifelong learning systems, countries need to make significant changes to both the governance and the financing of education and training. In many industrial countries, governments that once focused exclusively on public financing and public provision of education and training are now trying to create flexible policy and regulatory frameworks that encompass a wider range of institutional actors. These frameworks include legislation and executive orders; arrangements for ensuring coordination across ministries and other institutions involved in education and training activities; and mechanisms for certifying the achievements of learners, monitoring institutional and system performance, and promoting learning pathways. Within this framework, the role of incentives is critical.

*The public sector can no longer be  
the sole provider of education*

The state will have to increase its cooperation with the private sector and civil society. The private sector can provide education in both traditional ways (owning and operating private schools and providing inputs, such as books, materials, and equipment) and novel ways (operating public

schools under contract). Enterprises also provide training and are increasingly involved in developing occupational standards and curricula.

*Government ministries need to coordinate their activities*

Agreements and ongoing collaboration among central, regional, and local governments in implementation are needed. In some countries, including Germany and the Republic of Korea, coordination has been promoted by merging the departments responsible for education and training. In contrast, in many developing countries many ministries, including industry-specific ministries, oversee, manage, and finance training. Competition for scarce resources in these countries prevents collaboration, promotion of high-quality training, and development of a continuum of training opportunities.

*Quality assurance systems are needed to assess learners and inform them about providers*

The outcomes of learning must be monitored effectively. Quality assurance systems need to recognize the range of formal and informal settings in which learning takes place, and they need to provide opportunities for learners to demonstrate their newly acquired skills and knowledge. Quality assurance systems also need to provide prospective learners with information about the offerings and performance of providers.

Quality assurance systems can also make it easier for learners to move among different types and levels of learning environments. Namibia, New Zealand, South Africa, and the United Kingdom have national qualification systems, which assign qualifications from different institutions to a set of levels, each linked to competency standards. Students at colleges and universities in the United States can transfer credits from one institution to another. And Europe-wide agreement on equivalences and quality assurance mechanisms is emerging (through the Bologna process).

*Policymakers need to rethink accreditation of institutions*

Some industrial and developing countries are beginning to accredit institutions on the basis of output or performance measures (such as graduation rates) rather than on the basis of input measures (such as the number of books in the library or faculty). In Bangladesh, for example, private secondary schools are supposed to achieve certain pass rates on

the university entrance examination to remain accredited (although the regulation is rarely enforced). In Armenia a certain percentage of students (currently 50 percent) at private (but not public) higher education institutions must pass the final examination. Increasingly, funding of institutions is also based on performance.

### **Financing Lifelong Learning**

More and higher-quality education and training opportunities over a lifetime will require increased expenditures, although resources will also need to be used more efficiently and in different ways. These expenditures cannot be met solely from public sources. What is needed is a menu of sustainable and equitable options that combine public and private financing.

*The private and public sectors need to work together to finance learning*

Governments need to finance lifelong learning for which social returns exceed private returns (for example, basic education). The private sector needs to play a role in financing investments for which private returns are high (for example, most higher and continuing education). Government intervention beyond the basic skills and knowledge should be targeted to learners from low-income or socially excluded groups and others facing high barriers to learning.

*No single financing system can serve the needs of all learners*

Policymakers need to consider a range of financing options, including subsidies, mortgage-type loans, human capital contracts, graduate taxes, income-contingent repayment schemes, entitlement schemes, asset-building schemes, and individual learning accounts. Whatever mechanisms are used, financing of learning beyond the basic competencies should include both cost-sharing and subsidy components. Subsidies could be the main source of financing for low-income learners. For higher-income groups, most financing could take the form of income-contingent loans at market interest rates.

### **Agenda for the Future**

The demands of a lifelong learning system are enormous, and most countries will not be able to implement all elements of the system at once. Countries must therefore develop a strategy for moving forward in a

systematic and sequenced fashion. An important step is to identify where a country stands, particularly with respect to its international peers.

*National systems of lifelong learning  
need to be benchmarked*

One way in which countries could move forward would be by establishing national benchmarks for measuring lifelong learning outcomes. Such measures are underdeveloped. Traditional measures of educational progress, such as gross enrollment ratios and public spending as a proportion of GDP, do not capture important dimensions of lifelong learning. Gross enrollment ratios measure inputs rather than achievement of core or other competencies. Total education spending includes more than just public spending. Traditional indicators also fail to capture learning in the non-formal and informal sectors, which is becoming increasingly important.

*A different approach to education reform is needed*

Continual reform is needed not only to accelerate the pace of reform but also to deepen the extent to which fundamental transformation of learning is carried out. The traditional model of education reform, however, is not amenable to constant change: streams of initiatives and policy changes are viewed as overwhelming to education stakeholders, causing reform fatigue and resistance to set in. Reform and change must therefore be built into institutions' own processes. In addition, policy changes need broad support and dialogue to facilitate ongoing adjustments during implementation.

*The World Bank will continue to deepen its understanding  
and help countries develop concrete strategies*

National policymakers and stakeholders worldwide need to engage in a dialogue on lifelong learning, helping governments formulate visions and concrete action plans for establishing both lifelong learning and innovation frameworks appropriate to their country contexts. The World Bank can help in this effort by deepening the understanding of the implications of the knowledge economy for education and training systems and by disseminating analytical and policy documents on education for the knowledge economy.

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## Acronyms and Abbreviations

ESA	education savings account
IALS	International Adult Literacy Survey
ICTs	information and communication technologies
ILA	individual learning account
IRI	Interactive Radio Instruction
MIT	Massachusetts Institute of Technology
OECD	Organisation for Economic Co-operation and Development
PDA	personal development account
PISA	Programme for International Student Assessment
TIMSS	Third International Mathematics and Science Study