

EDUCATION IN A GLOBALIZED WORLD*

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INTRODUCTION

The State of the World's Education

Fifteen years ago, delegates from 155 countries met in Jomtien, Thailand and agreed on a framework for action to implement the World Declaration on Education for All. The framework was not a pledge, but it stated that in setting targets for the coming years, countries might wish to aim for universal completion of primary education by 2000.¹

Respectable educational advances were made in the 1990s, but it was clear by 2000 that the goal of universal primary education was far from being achieved. The international community therefore acted to reinvigorate movement toward this goal by including the universal completion of primary education by 2015 among the United Nations Millennium Development Goals (MDGs). The MDGs also called for the elimination of 'gender disparity in primary and secondary education preferably by 2005,

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¹ http://www.unesco.org/education/efa/ed_for_all/background/07Bpubl.shtml

and at all levels by 2015'. All 191 members of the United Nations have pledged to meet these goals.

Today, as in the past, there are good, bad, and ugly parts to the story of how the world is faring in its effort to improve educational access and quality.² The good news is that the world has made progress in moving toward the MDG on primary education. Two developing regions – Latin America and the Caribbean (which is very close to the goal), and the Middle East and North Africa – have made enough progress that they are on track to achieve that goal by 2015. The East Asia and the Pacific region has reached a very high completion level, though it would not quite reach 100% by 2015 at its current rate of improvement.³

The bad news is that it is becoming increasingly apparent that many countries will not meet the 2015 target. Progress is slow in Europe and Central Asia; and in Sub-Saharan Africa, it is both slow and starts from a low point. Neither region is on track to meet this MDG by 2015. South Asia is ahead of Sub-Saharan Africa but it, too, will not reach the goal without a near-term, major increase in the rate at which this indicator is improving.⁴ A careful new study by the Education Policy and Data Center⁵ shows the historical trends for universal primary entry and universal primary completion for 70 developing countries. Very few will make the Millennium Development Goal of primary school completion, although some are improving rapidly and will come close to the goal within the decade. But at current rates of improvement, most will reach 90% primary completion some time after 2020 and, in many cases, not for decades after that. Another way of looking at this issue is to note that even if education continues to expand at the pace it did between 1990 and 2000, an estimated 118 million primary-school-age children – 16 per cent of the primary-school-age population – will not be enrolled in school in 2015.⁶ Along these same

² A review of many of the basic and secondary education issues discussed in this paper is Joel Cohen and David E. Bloom (2005), 'Cultivating Minds', *Finance and Development* (42)2, June, pp. 9-14.

³ <http://ddp-ext.worldbank.org/ext/GMIS/gdmis.do?siteId=2&goalId=6&targetId=17&menuId=LNAV01GOAL2SUB1>

⁴ <http://ddp-ext.worldbank.org/ext/GMIS/gdmis.do?siteId=2&goalId=6&targetId=17&menuId=LNAV01GOAL2SUB1>

⁵ Annababette Wils, Bidemi Carrol, and Karima Barrow, *Educating the World's Children: Patterns of Growth and Inequality*, Washington, Education Policy and Data Center, 2005.

⁶ David E. Bloom (2005), 'Global Education: facts and data for measuring progress', Working Paper of the Project on Universal Basic and Secondary Education, October (Cambridge, MA, American Academy of Arts and Sciences).

lines, a new UNESCO study also provides a sobering conclusion about the likelihood of the world achieving the goals of Education for All (now incorporated into the MDGs).^{7,8}

Secondary and tertiary education, moreover, have been noticeably absent from global education initiatives, despite growing recognition of their economic and social importance. Rising numbers of primary school graduates, coupled with rising income, have led to increased demand for secondary education. An estimated 217 million children of secondary-school age are projected to be missing from secondary school in 2015. This equates to 30 per cent of the relevant age group (12-17) worldwide.⁹ In developing countries, only around half of the age group are enrolled in school,¹⁰ and gender disparities in some areas are vast: 52 per cent of South Asian boys, for example, are enrolled at secondary level, compared to just 33 per cent of girls.¹¹

Test scores, too, are low in developing countries, strongly suggesting that educational quality is low. Although relatively few such countries participate in international comparisons of capabilities in reading, math, or science, those that do have mostly fared poorly. An exception is the countries of Eastern Europe and the former Soviet Union, whose performance is mixed. In Eastern Europe, test scores started high in the immediate post-Soviet era but have since declined.

⁷ United Nations Educational, Scientific and Cultural Organization (2005), *Towards Knowledge Societies*, Paris, UNESCO, p. 71.

⁸ Some have argued that the situation is not as bleak as described here. In particular, Wu, Kaul, and Sankar (Kin Bing Wu, Venita Kaul, and Deepa Sankar, [2005] 'The Quiet Revolution', *Finance and Development* 42[2], June, pp. 29-31) document India's successful focus on increasing enrollment in primary and secondary schools. Unfortunately, the facts may not be as clear as presented by these authors. World Bank data (which are incomplete but usable and are taken from earlier and current UNESCO data) do not show the rapid changes these authors discuss. More importantly, the study cited above from the Education and Policy Data Center examines completion rates, not enrollment rates. Here, the story is still discouraging. India is not expected to reach 90% primary completion until 2027. Of course, the rate of change may be faster than predicted, in which case it would be true that India, at least, is in better shape than I have described for South Asia as a whole. Regarding gender disparities in enrollment, World Bank data indicate that in India, these, too, are changing only slowly.

⁹ David E. Bloom (2005), *ibid.*

¹⁰ UNICEF (2002), *State of the World's Children 2002*, UNICEF, Geneva.

¹¹ David E. Bloom (2004), 'Globalization and Education: An Economic Perspective', in Marcelo M. Suárez-Orozco and Desiree Baolian Qin-Hilliard, eds., *Education, Culture and Globalization in the New Millennium*, University of California Press, pp. 56-77.

The ugly news is that large educational disparities remain between wealthy industrial countries and the developing world. In Sub-Saharan Africa for example, only 60 per cent of primary-school-age children there are enrolled in school, compared to 95 per cent in high-income countries.¹² Worse yet, there is reason to believe that some of the somewhat optimistic statistics from UNESCO about large gains in enrollment in Sub-Saharan Africa are inaccurate, since they conflict with data about the share of GDP spent on education, which is declining.¹³ Some developing countries have seen declines in primary completion rates since 1990.¹⁴

Gender disparities in primary completion remain high in some countries. The worst region in this regard is South Asia, where 84% of boys but only 71% of girls complete primary education.¹⁵ This situation is a *prima facie* case of discrimination against girls. A lack of education severely limits a girl's opportunities in life. Girls who do not attend school tend to have children earlier. Uneducated mothers are less able to look after the health and education of their own children and are less able to manage family finances. Since education boosts earnings, uneducated women tend to earn less because they do not have the skills to participate in many sectors of an economy, and also because they are female.¹⁶ Attention to this issue in recent years has led to impressive successes. A concerted effort in Morocco to increase educational opportunities for girls led to a rise in their primary enrollment rate in the course of half a decade from 67% to 87%.¹⁷ But exceptions like Morocco highlight the more general failure. Moreover, disparities in access to education for girls are prevalent even *within* countries where progress is evident; girls in wealthier, urban settings may enjoy new opportunities, while those in the poorest and most remote regions remain

¹² David E. Bloom (2004), *ibid.*

¹³ Jean-Claude Berthélemy, 'Globalization and Challenges for Education in Least Developed Countries'. Paper prepared for the Joint Working Group on Globalization and Education of the Pontifical Academy of Sciences and the Pontifical Academy of Social Sciences 16-17 November, Vatican City, 2005.

¹⁴ UN Development Goals website: www.developmentgoals.org

¹⁵ World Bank, World Development Indicators 2004. Data for 2002.

¹⁶ A more extensive discussion of gender disparities in education is David E. Bloom and Mark Weston, 'Girls' Education in Developing Countries: Mind the Gap', August 25, 2003. <http://www.pbs.org/wnet/wideangle/shows/school/>

¹⁷ Annababette Wils, Bidemi Carrol, and Karima Barrow, *Educating the World's Children: Patterns of Growth and Inequality*, Washington, Education Policy and Data Center, 2005.

excluded. One other trend is noteworthy: In Latin America,¹⁸ as well as in tertiary education in the United States and the EU,¹⁹ girls are beginning to receive more education than boys.

With secondary and tertiary education, the enrollment gaps between regions are even wider than in primary education. Sub-Saharan Africa has just 26 per cent secondary enrollment.²⁰ Only 5 per cent of its tertiary-school-age population is enrolled in higher education. In South Asia, just 10 per cent receive tertiary schooling. High-income countries, by contrast, have over 65 per cent tertiary enrollment.²¹ Overall, individuals in developing countries receive an average of fewer than five years of schooling; in the industrialized world the average is over nine years.²²

The Pressures of Globalization

In a globalized world, education at all levels is more important than ever. Globalization refers to the integration of economies via movements of goods, capital, ideas, and labor. It currently occurs mainly through the first three of these channels. As countries have reduced barriers to imports and exports, allowed greater capital mobility, and opened up to foreign ownership of domestic industries, international trade and investment have flourished and economies have become more interdependent. The accelerated flow of knowledge and ideas as a result of communications improvements, meanwhile, has increased cultural and social interdependence.

Some countries have thrived on the back of globalization; others have not. By merging many national markets into one global market, globalization increases the competitive pressures faced by individuals, companies, and societies. Those countries that have been able to improve their pro-

¹⁸ Andersen, L.E. (2000), 'How is social mobility related to education policy in Latin America? A schooling gap regression analysis', Instituto de Investigaciones Socio-Económicas (IISEC), Universidad Católica Boliviana, La Paz, Bolivia. Summary available at <http://www.eldis.org/static/DOC9630.htm>

¹⁹ Emily Hannum and Claudia Buchmann (2005), 'Global Educational Expansion and Socio-Economic Development: An Assessment of Findings from the Social Sciences', *World Development*, vol. 33, n. 3, pp. 333-354.

²⁰ David E. Bloom, Joel E. Cohen (2002), 'The Unfinished Revolution: Universal Basic and Secondary Education', *Daedalus*, Summer 2002, pp. 84-95.

²¹ David E. Bloom, David Canning and Kevin Chan (2005), 'Higher Education and Economic Development in Africa', paper presented at the World Bank, September 22.

²² UNESCO (2000), *World Education Report 2000*, UNESCO, Paris.

ductivity and find areas of competitive advantage have thrived. Those that have not have floundered. East Asia has achieved dramatic quality of life improvements by carefully opening up to the global economy, and its nations have moved from low to middle and upper-middle incomes in the past half-century. Ireland, Spain, and several Southeast Asian economies have also benefited from lowering barriers to trade and investment. Other regions have struggled. Sub-Saharan Africa experienced negative economic growth in the 1990s, with the number of people in the region living in poverty almost doubling since 1981. South Asia has fared better, but nearly 30 per cent of its people remain mired in poverty.²³

Education has been a vital component of the successful globalizers' progress. Those countries that have moved from low to higher incomes – think of Singapore, Hong Kong, Taiwan, South Korea, and Ireland – appear to have advanced at least partly on the basis of a strong commitment to education at all levels, as well as a careful openness to global markets. Others that have done moderately well, such as Chile and Mauritius, have followed a similar path. Looking further back the economist Amartya Sen has shown how Japan's economic development over the past 150 years was built on educational expansion and improvements.²⁴ China, too, had created a highly literate population through effective primary and secondary education before it began to develop rapidly in the 1980s and 1990s. India, on the other hand, neglected primary and secondary schooling in favor of higher education, and has been slower to benefit from globalization. These facts highlight two broad questions: First, for a given country (or for all countries), is there a 'best path' to educational expansion, if one of the goals is for a country to take advantage of globalization? In other words, is there an ideal order in which countries should focus on developing primary, secondary, and tertiary education? To what extent should resources be shifted from one level to another after a certain degree of progress is made? And second (and this is particularly hard to quantify), to what extent should resources be devoted to improving the quality of education, when there are generally tradeoffs between that and expanding access? These questions can only be resolved by further research and careful thinking about past experiences, the differences in country contexts, and the specific opportunities and challenges that globalization presents to a particular country.

²³ UN Development Goals website, *ibid*.

²⁴ Amartya Sen (1999), *Development as Freedom*, Oxford University Press, pp. 42-3.

Since globalization has heightened the economic importance of knowledge, education will also be key if other countries are to benefit from globalization. Countries whose populace has attained only primary education are likely to continue to have economies built on low-skilled labor with relatively low productivity. But even increased access to primary education can move farmers and other workers from 'very low' to 'low' productivity, with enormous immediate gains in welfare.²⁵ Achieving higher productivity, which is the key to rising incomes, requires that workers have skills that allow them to work well in services and industry. Countries that fail to educate girls are harming themselves economically, since they are drawing on only a portion of the skills their population could have. In a context of global production, when other countries are educating all of their residents, those that limit the economic contributions made by women will lose out.

As globalization opens up opportunities for educated workers, it is likely to expand economic inequalities *within* countries. Since workers with good skills are more likely to be in demand by industries that are connected to the international economy, they are the ones most likely to benefit. Workers who are relatively less educated will therefore find that even within their own country, they are falling behind. If globalization leads to increased joblessness, the results may be dramatic and will likely be similar to the unrest that frequently comes as a consequence of widespread unemployment. Such reactions may be particularly common as unemployed workers see their neighbors getting richer. For poorly skilled immigrants (who often migrate because of economic pressures, some of which are related to globalization), the new economics they face may be particularly problematic.

In short, education plays a crucial role in determining the winners and losers of globalization. But how does globalization affect education? Below we outline three action areas for educational improvement that globalization has made especially important. The first is the need to improve quality. The second relates to the expansion of secondary schooling, and the third to higher education.

²⁵ Dean T. Jamison and Lawrence Lau (1982), *Farmer Education and Farm Efficiency*, Baltimore, Johns Hopkins University Press.

THE NEED FOR ACTION

Globalization places a premium on the quality of education. As individuals advance from subsistence farming to trading agricultural goods and eventually move into services and industry, the need for flexibility in thinking and adaptation to new skills and technologies increases.²⁶ Globalization drives these processes, and the old style teaching methods and materials are no longer appropriate. Obviously, expansion of educational opportunities is critical to providing more people with the benefits education confers. Such expansion will be even more beneficial if it is accompanied by an increase in quality.

Education has benefits for both individuals and societies. At an individual level, it enables people to develop their capabilities and realize their potential. It increases their knowledge of the world, and, while they are in school, brings them into contact with other students who will become friends or professional associates. And it gives individuals the skills needed to thrive in the job market, boosting their productivity and increasing earning power. In developing countries, it has been estimated that each additional year of education raises earning power by well over 10 per cent.²⁷

The benefits to societies are also broad. By increasing awareness of others' circumstances and motivations, education can make societies more tolerant, thereby increasing social cohesion.²⁸ In a globalizing world where the movement of labor means countries have to assimilate newcomers from many different backgrounds, tolerance and understanding become especially important to societies' wellbeing.

The economic benefits to societies arise from the fact that education raises national labor productivity, which is central to economic development, by strengthening the stock of human capital and facilitating the adoption of new technologies. An educated populace can benefit even those who are not educated, by providing a cadre of leaders to run the economy and the government effectively and by expanding the pool of

²⁶ See Kai-ming Cheng (2003), 'Education for All, but for What?'. Paper prepared for the American Academy of Arts and Sciences. September, for a probing discussion of the changing nature of work and the consequent need to rethink the goals and means of education.

²⁷ George Psacharopoulos and Harry Anthony Patrinos (2004), 'Returns to investment in education: a further update', *Education Economics* 12(2), pp. 111-134.

²⁸ This is not inevitable, of course. Some well-educated societies, such as Nazi Germany, have been murderously intolerant.

job-creating entrepreneurs. Education thereby contributes to poverty reduction, which reduces the strain on public funds and brings more people into productive activity.

Improving Quality

Merely being enrolled in school, however, does not ensure an individual will reap these benefits. The quality of education received is critical. Quality is more difficult to measure than enrollment figures,²⁹ and it has often been neglected by policy-makers keen to have something tangible to show for their investments in schooling. But recent work by Eric A. Hanushek and Dennis Kimko³⁰ suggests that countries that successfully pursue quality improvements (and that achieve only moderate results) can expect economic returns by 2040 that will pay for all educational expenditures by that year. In addition, these same researchers conclude that the positive economic growth effects of improved quality are evident even when East Asian countries are excluded from such an analysis and, provocatively, that 'direct spending on schools is unrelated to student performance differences'.³¹

In many developing countries, the educational experience is characterized by rote learning, outdated curricula, uninspiring and under-qualified teachers, and repeated failure to complete school years. Nearly one-quarter of those who entered developing country primary schools in 1993 did not reach the fifth grade.³² Scores on tests designed to measure student achievement in a variety of countries show that in the developing countries that participate in such tests, student learning of some basic skills is minimal. For example, students in low-income countries dominate the ranks of those in the lowest quartile in reading. Broadly speaking, countries throughout Latin America and Sub-Saharan Africa show low achievement in reading and math.³³ Despite advances in enrollment, moreover, illiteracy remains

²⁹ My discussion of school quality is tempered by the fact that many attempts to measure quality are based on observations that are relatively accessible, such as test scores. I am unaware of a comprehensive framework for assessing quality.

³⁰ Reported in Eric A. Hanushek (2005), 'Why Quality Matters in Education', *Finance and Development* 42(2), June, pp. 15-19.

³¹ Eric A. Hanushek, , and Dennis D. Kimko, 2000, 'Schooling, Labor Force Quality, and the Growth of Nations', *American Economic Review*, vol. 90, n. 5 (December), pp. 1184-1208.

³² Bloom, Cohen (2002), *ibid*.

³³ United Nations Educational, Scientific and Cultural Organization (2004), *Education for All Global Monitoring Report 2005: The Quality Imperative*, Paris, UNESCO.

rife in some regions, suggesting many pupils have not long been learning even basic skills in school. In South Asia, 27 per cent of males aged 15 or over and 56 per cent of females are illiterate. In Sub-Saharan Africa, the respective proportions are 29 per cent and 42 per cent.³⁴

There are several factors that influence the quality of education. Physical facilities, such as buildings and books, can affect the learning experience. Pupil-teacher ratios may also be important. In Tamil Nadu, India, Duraisamy and co-authors found that rising primary and secondary enrollment rates significantly outpaced increases in the number of teachers. Enrollment grew by 35 per cent between 1977 and 1992. Teacher numbers increased by just 4 per cent.³⁵

Perhaps most important is the ability and enthusiasm of teachers themselves. Teachers' ability, of course, depends largely on their own education, so countries with weak education systems are at a disadvantage relative to better-educated populations. Intensive training courses are one way of helping teachers catch up. Use of technology, too, such as online teaching materials and lesson plans, and Internet-based discussion and training groups, can accelerate teacher development.

Teachers' motivation also needs to be addressed. Low salaries, high pupil-teacher ratios,³⁶ strict curricular diktats from governments, and

³⁴ World Bank (2005), World Development Indicators 2005 (data from 2002).

³⁵ P. Duraisamy, Estelle James, Julia Lane, Jee-Peng Tan (1997), *Is there a quantity-quality tradeoff as enrollments increase? Evidence from Tamil Nadu, India*, Policy Research Working Paper, World Bank, Washington, DC.

³⁶ High pupil-teacher ratios (PTR) would seem to be a definite impediment to learning and to teacher motivation. Interestingly, however, China (which has a fairly low PTR but large classes (45-50 students) because of poor utilization of teachers) and the Republic of Korea (which has large classes) – data are from 1992 and are reported in K.M. Lewin, (1998). 'Education in Emerging Asia; Patterns Policies and Futures into the 21st Century', *International Journal of Educational Development International Journal of Educational Development*, Vol 18, Number 2, pp. 81-118 – have both had good educational outcomes. One hypothesis that has been suggested to explain this apparent anomaly is that these countries have a long history of emphasizing education, and that culturally bound expectations affect the performance of teachers, parents, and students – and that these factors are more important than class size. But in much of the world, large class sizes probably really are demoralizing to both students and teachers. Another interesting point is that instructional radio for mathematics has shown huge and sustained test score gains for substantial populations. See Jamison, D.T., Klees, S.J. and Wells, S.J. (1978) *The costs of educational media. Guidelines for planning and evaluation*, Beverly Hills, Sage Publications. It is not altogether clear whether this success has mainly to do with the perhaps-high motivation of those who choose to learn via radio, or with the medium of instruction itself.

mountains of paperwork often demoralize teachers and give them few incentives to provide quality teaching. Irrelevant curricula add to the burden, and it is important to involve teachers (as well as parents and, perhaps, businesses given the latter's awareness of an economy's changing needs) in curriculum reform and give them the flexibility to be innovative in their teaching methods. Worthwhile rewards based on measurable results (improved exam scores, for example, or increased literacy and pass rates) are likely to stimulate innovation and encourage on-the-job learning.

Secondary Education

Although the United Nations Millennium Development Goals highlight the importance of education, they refer only to primary education. Primary education is, of course, crucial, and efforts by countries and international donors to strengthen it over the last few decades have been important. Without a strong primary education system, potential entrants into secondary school will not be as prepared as need be. In a globalizing world, however, primary education is not enough.

The skills attained in primary school may be sufficient in a poor, static, and isolated economy where knowledge of matters beyond one's closest community is unnecessary and there is little opportunity to use more advanced skills. But globalization is increasing the returns to moving up the industrial value chain and broadening knowledge horizons; a deeper schooling than that provided by primary education is therefore required. Countries that do not devote attention to secondary schooling will not be able to advance economically – as UNESCO has stated, 'for economic growth to take place, a high proportion of the population has to have received secondary education'.³⁷

The improved knowledge and skills generated by secondary education have long-term repercussions. Women who have attended secondary school have fewer children than those who have not. The former group delay childbearing in order to use their skills in the workplace; they are more aware of contraception and of the economic benefits of smaller families; and their increased knowledge of health care means their children may be more likely to survive to adulthood, so they need fewer children to attain their desired family size. In Brazil, women with secondary

³⁷ UNESCO International Commission on Education for the Twenty-first Century.

education have around 2.5 children. Illiterate women have 6.5 children, on average.³⁸ Hannum and Buchmann have shown that a 10 per cent increase in gross secondary enrollment ratios is associated with an average reduction in family size of 0.2 children, and they offer a well-articulated set of reasons to believe that increased secondary education actually leads to reduced family size.³⁹ Reduced fertility, in turn, can spark a demographic transition and create a baby boom generation that can make a sizable contribution to an economy.

Governments and international agencies, which were initially slow to invest in secondary schooling, have at last begun to respond to the growing need. The World Bank, for example, which admitted that until the 1990s, 'secondary education was rarely placed on the policy agenda',⁴⁰ increased lending for the sector from US\$30 million to US\$400 million between 1989 and 1998.⁴¹ The World Bank's new publication on secondary education stresses the importance of secondary education as 'the highway between primary schooling, tertiary education and the labor market'.⁴²

As a result of the historic neglect of secondary education, the gaps in enrollment rates between industrialized and developing countries – gaps that have shrunk for primary schooling – have grown.⁴³ In the developed world, around 80 per cent of the population over the age of 15 has received some secondary education. In Latin America and the Caribbean, where primary enrollment has risen above 90 per cent, fewer than 50 per cent have

³⁸ S.J. Jejeebhoy (1996), *Women's Education, Autonomy and Reproductive Behavior: Experience from Developing Countries*, Oxford University Press, New York.

³⁹ E. Hannum and C. Buchmann (2003), 'The Consequences of Global Education Expansion: Social Science Perspectives', Occasional Paper of the American Academy of Arts and Sciences, Cambridge, MA.

⁴⁰ Serrant, Ted D. and Maureen W. McClure (2000), 'Secondary Education Reform: Policy Briefing Paper', Washington, DC, World Bank.

⁴¹ David E. Bloom (2004), 'Beyond the Basics: Patterns, Trends and Issues in Secondary Education in Developing Countries, 2004', Paper prepared for the World Bank

⁴² World Bank (2005), *Expanding Opportunities and Building Competencies*, Washington, The World Bank.

⁴³ The vastly different fraction of the population attending secondary schools in developed (as represented by Northern Europe) and developing (as represented by Latin America) countries has very old roots. In 'The Challenge of International Educational Gaps in the Context of Globalizations', Juan J. Llach shows that this divergence goes back more than a century. (Paper prepared for the Joint Working Group on Globalization and Education of the Pontifical Academy of Sciences and the Pontifical Academy of Social Sciences 16-17 November, Vatican City, 2005).

received secondary schooling. In South Asia, the proportion drops to around 30 per cent, while in Sub-Saharan Africa fewer than 20 per cent of people over the age of 15 have attended secondary school.⁴⁴

If the quantity of secondary schooling is to be improved, much will depend on the resources devoted to the sector. The expansion of access to primary education was spurred by huge investments on a global as well as national scale. As diseconomies of scale set in as primary schooling reaches saturation levels, the relative priority of directing resources to primary and secondary education will likely change.

Smarter use of funds is also essential. Good schooling relies more on teachers than buildings. Developing a cadre of well-trained and highly motivated teachers should take precedence over building plush facilities. Removing the impediments to the work of teachers and giving them the freedom to be creative and innovative can increase the return on the investment in teachers' training and salaries. This will have the added effect of reducing the need for bureaucrats to manage every stage of the secondary education process – the funds freed up by this can instead be invested in teachers.

Enrollment is not the only problem, however. The quality of secondary schooling is also weak in many developing countries. Data on quality are patchy, but in Uganda, for example, where 15 per cent of secondary teachers have no training at all, the median repetition rate is 15 per cent.⁴⁵ Clearly, secondary school teachers need more advanced knowledge than primary teachers, so it may be more expensive to train them and keep their skills updated. Much can be gained through self-teaching, however, and if results-based incentives encourage teachers to seek out their own ways to improve – through peer-to-peer discussion groups, for example, or online teaching materials – training costs incurred by education systems need not take up too much of the budget. Such an approach will require giving teachers the autonomy to work toward the desired results in their own way. This is not always an easy step for governments to take, but where resources are tight state education departments' time would be better spent developing incentives and framing clear standards than micro-managing individual teachers.

⁴⁴ D. Cohen and M. Soto (2001), *Growth and human capital: Good data, Good Results*, OECD, Paris.

⁴⁵ UNESCO Institute for Statistics (2001), *Sub-Saharan Africa Regional Report*, UIS, Montreal.

What is needed is a focus on the essentials. The key outcomes of secondary education are literacy, numeracy, and social skills that equip pupils to play a productive part in the workplace and in society. In expanding access to secondary schooling while maintaining a focus on quality, policy-makers, teachers, and parents will benefit from keeping these goals in mind at every stage, and asking, with each new initiative or measure, whether it will contribute to their achievement and if so, how efficiently.

Higher Education

The third key area for educational improvement in a globalized world is tertiary schooling. The latter has not always been recognized as a public good worthy of investment. In developing countries in particular, it has been regarded as a luxury rather than a necessity. In high-income countries, as noted earlier, gross tertiary enrollment ratios are about 65 per cent. In the developing world, despite increases in the past two decades, they languish below 20 per cent.⁴⁶

International donors and national governments for long saw higher education as elitist – it was historically the preserve of the wealthy, and with large swathes of populations not even receiving primary schooling, investing in higher education was considered inequitable. Rate of return calculations carried out by economists, who showed that primary and secondary education were sounder investments from both a private and social point of view, gave added force to the equity arguments.⁴⁷

These arguments, however, did not tell the whole story, and globalization has accentuated their flaws. Traditional rate of return analysis focused on the private benefits of higher education in terms of individuals' earnings and the public benefits in terms of taxes paid by those individuals. It did not recognize the many broader benefits. Globalization places a premium on the skills and knowledge gained in universities and advanced vocational colleges. Knowledge has become a key source of

⁴⁶ David E. Bloom, Henry Rosovsky (2005), 'Higher Education in Developing Countries', in James J.F. Forest and Philip Altbach, eds., *International Handbook of Higher Education*, vol. II, forthcoming.

⁴⁷ Further discussion of the rate of return arguments and, more broadly, of the questions of elitism that arise in supporting higher education, are addressed in The Task Force on Higher Education and Society (2000), *Higher Education in Developing Countries: Peril and Promise*, Washington, The World Bank.

comparative advantage between nations.⁴⁸ India's recent success in the information technology and service industries has been built on a strong higher education system whose institutions, such as the Indian Institutes of Technology, have tailored their teaching and research to the demands of the global marketplace. The East Asian tiger economies, too, used the knowledge and flexibility of mind inculcated by their higher education systems to move rapidly from low-value to high-value industries, with enormous effects on quality of life in the region.⁴⁹

Effective tertiary schooling gives countries a corps of people with a higher level of capabilities than can be attained in primary and secondary school. In an increasingly competitive world economy where companies have to outperform not just local rivals but international competitors, a skills race has developed. Countries that possess only basic skills and knowledge may be able to penetrate global markets if foreign investors buy their goods. They will have difficulty, however, in adding value to primary commodities by processing them or branding and marketing them. Nor will diversification into more lucrative sectors prove straightforward. Societies that do not upgrade their skills are likely to remain at the bottom of the economic value chain, vulnerable to exploitation by others and with slim hopes of being able to exert control of the global integration process.

Higher education does not just benefit those who receive it. A United States study comparing states with high and low proportions of college-educated workers found that earnings in the former were higher for both graduates and non-graduates.⁵⁰ A possible reason for this is that individuals with higher education were more likely to become entrepreneurs than those with lower levels of schooling. More-educated entrepreneurs, moreover, created more jobs.⁵¹

As well as providing nations with more productive people who can thrive in international business, higher education gives countries the local

⁴⁸ Extensive discussion of the increased importance of knowledge in the development of countries is found in United Nations Educational, Scientific and Cultural Organization (2005), *Towards Knowledge Societies*, Paris, UNESCO.

⁴⁹ Interestingly, and perhaps tellingly, Latin America, and the Middle East and North Africa, both of which have had much higher rates of participation in higher education, did not benefit in the same way.

⁵⁰ David E. Bloom, Matthew Hartley and Henry Rosovsky (2005), 'Beyond Private Gain: The Public Benefits of Higher Education', in James J.F. Forest and Philip Altbach, eds., *International Handbook of Higher Education*, vol. I, forthcoming.

⁵¹ *Ibid.*

knowledge resources and leadership skills needed to take part successfully in international trade negotiations; design education systems that meet the needs of a changing world; manage the negative effects of globalization such as environmental damage and the spread of infectious disease; and find ways to ensure the fruits of global integration contribute to social goals such as poverty reduction. Higher education institutions also provide crucial support for primary and secondary education, both by training teachers for these lower levels and for studying what educational practices work best in a particular country context.

A side note here: Although higher education does offer a country the advantages specified above, and despite the fact that the benefits of higher education accrue to wide segments of the population, there is still no reason to think that *universal* higher education has become more important because of globalization. Indeed, the same is true of primary and secondary education: the benefits that globalization can bring to a country, although enhanced by people having each of the three levels of education, do not depend on *everyone* being educated. For the foreseeable future, there will be economic activities that are not particularly related to foreign commerce or international competitiveness, but that are productive from a personal and national point of view and that can be carried out by people with a wide range of educational achievement. The specific types of jobs that are available will vary considerably from one country to another. To the extent that a country can define its niche in the world economy and ensure that its education system produces graduates who can work well in the sectors of the economy relevant to that niche, both workers and employers can benefit. Both government and business elites typically carve out such niches, and their choices will help to determine which emphases within an education system will be most beneficial to students. An education system that is seeking relevance will need to be constantly attuned to producing graduates who are flexible enough that they can continually learn new skills as they are required in new enterprises. But in the end, there is, of course, another, very fundamental argument for universal education that is widely accepted: that education is of value in itself. Whether or not a country is doing everything it can to benefit from globalization, educating its population well and striving to do so in a way that promotes educational equality is a worthy goal.

In any case, expanding access to higher education does not come without risks. The phenomenon of 'brain drain', whereby well-educated individuals take their skills abroad and rob their home countries of a return on

the investment in their schooling, has accelerated in the wake of globalization. Recouping some of this investment is politically important if advocates of higher education are not to be accused of squandering their countries' resources. Globalization does, however, offer opportunities for countering the brain drain. Leading research universities in some parts of the developing world are increasingly competitive with peer institutions in the United States and Western Europe.⁵² (This development raises an important question: Should developing countries seek to create competitive, world-class universities, or should they focus higher education resources in ways that identify and capitalize on the comparative advantages each country may possess?)

Improvements in communications mean the generation of knowledge is no longer confined to the physical space of a single university or laboratory. Today, universities are linking up with other types of institution, including businesses, private consultancies, governments, NGOs and other higher education establishments to develop knowledge. These institutions may be based in one country or several.

Some countries have attempted to turn the outward migration of well-educated graduates to their advantage. The Colombian Network of Researchers and Engineers Abroad (Red Caldas) brings together Colombian scientists and engineers from 23 countries to develop solutions to the country's problems. Collaboration is largely conducted by email.⁵³ The University of Cape Town in South Africa, meanwhile, has set up an international knowledge-sharing network whereby researchers from universities across Sub-Saharan Africa work together to find ways to promote development in the region.⁵⁴

The possible solutions to brain drain overlap with the solutions to the developing world's higher education deficit. If the economic gaps between developed and developing worlds are to be diminished, strengthening systems of tertiary schooling must become a priority. The benefits of higher education for countries attempting to profit from globalization are broad. So too are the skills needed. Skills in policy development, trade negotiations, and the equitable governance of health and education systems must be combined with innovation in business, the flexibility to adopt and devel-

⁵² See e.g., 'China Luring Scholars to Make Universities Great'. www.nytimes.com/2005/10/28/international/asia/28universities.html

⁵³ David E. Bloom (2003), *op. cit.*

⁵⁴ *Ibid.*

op new technologies, the ability to identify and take advantage of new markets, and the skills to run successful enterprises and work productively with foreign partners.

No single type of institution can produce all these skills. Higher education should therefore be viewed as a multi-faceted system that gives a country the broad set of abilities it requires.⁵⁵ Research universities will be one part of this system, generating new knowledge and giving students both a broad liberal schooling and specialist knowledge in key areas. Institutions of higher education are also the seat of much teacher training. Vocational colleges will be important too, to give students the specialized technical and managerial skills to thrive in industry. Some learning will take place on site, but some students will prefer distance-learning courses – a method of learning that advances in Internet and mobile technology have made more feasible. Private for-profit institutions are likely to provide some tertiary schooling, with governments fulfilling a regulatory role to ensure standards are adhered to. In public institutions, meanwhile, governments will need to find ways of subsidizing the education of those who lack resources without breaking the bank, perhaps through a system of student loans where fees are repaid once graduates reach a certain level of earnings.

A systemic approach to higher education requires visionary planning, with a constant focus on a country's needs. Involving other sectors, including primary and secondary education systems, business, and the non-governmental sector, will aid in the design of a broad and responsive system with relevant curricula. Government's role will involve providing stable and long-term funding, developing standards and goals to ensure quality, setting some research priorities, and monitoring and evaluating the outputs of the system as a whole.

Developing higher education systems that produce what a country needs in today's rapidly changing world is obviously a complex task. It is also an essential one, and developing countries need to make a start now if they are to begin to catch up with the knowledge economies of the industrialized world. Financing the expansion of higher education is, of course, quite difficult in most developing countries. Most students cannot afford the costs, but tax-based finance often puts a disproportionate share of the burden on the poor. Deferred fees and a well-designed loan program will

⁵⁵ Task Force on Higher Education (2000), *Higher Education in Developing Countries: Peril and Promise*, Washington, DC, The World Bank.

often be the answer,⁵⁶ although many developing countries will find it difficult to start and operate a loan program that is financially sound and that reaches the target population.

Conclusions

Globalization is increasing the pressure on education systems in both rich and poor countries. So far, although developing countries have managed to narrow the gap in terms of primary education, rich countries have responded most effectively to the pressure. Recognizing the need for more advanced skills and knowledge, they have invested heavily in secondary and tertiary schooling and maintained a strong focus on improving quality.

Developing countries and their international partners have been slow to acknowledge the growing importance of higher levels of schooling, and they have suffered as a result. Basic literacy and numeracy skills and a lack of advanced knowledge – 90 per cent of patents are granted to innovators in industrialized countries, which contain just 15 per cent of the world's population⁵⁷ – have left them ill-equipped to benefit from global integration and vulnerable to its less benign consequences.

Fortunately, globalization offers these countries opportunities to catch up. Speedy and inexpensive communications technology gives them and their education establishments easier access to other institutions and knowledge networks, facilitating collaboration on issues ranging from curriculum design and teacher training to primary research and policy development.

Increasing primary education enrollment has been a major development success story in recent decades. As globalization advances, however, a new set of priorities for education must be addressed. Improved quality at all levels and expanded access to secondary and tertiary schooling are vital if developing countries are to close the economic gap with the West. National governments and international donors have begun to recognize this, and they should not delay in turning recognition into action.

High-income countries can play a significant role in education development. Jamison and Radelet⁵⁸ suggest that such countries have three key

⁵⁶ Nicholas Barr (2005), 'Financing Higher Education', *Finance and Development* 42(2), June, pp. 34-37.

⁵⁷ Bloom, Rosovsky (2005), *op. cit.*

⁵⁸ Dean T. Jamison and Steven Radelet (2005), 'Making Aid Smarter', *Finance and Development* 42(2), June, pp. 42-46.

roles to play: (a) facilitating the diffusion of best practices, e.g., the elimination of user fees, increasing hours of instruction, improving student health, and measures for improving quality; (b) supporting research on methods for improving education and testing the results of new initiatives; and (c) encouraging improvements by targeting funds to countries that use them successfully.

One final factor deserves mention: a government's, and a country's, political will to address this issue is crucial. Politicians often pay little attention to improving education, because they are unlikely to be in office long enough for any improvements to be credited to them. In addition, the poor in most countries are the most likely to need significantly strengthened education – and these are exactly the people whose needs are easiest to ignore. Exacerbating the situation is the fact that expenditures on education may be directed to areas in which the ruling political party has (or is seeking) supporters. None of these circumstances militates in favor of improved education for those who need it most. Some countries or regions within them have mustered the political energy to prioritize education, with exceptional results. Costa Rica, Cuba, Sri Lanka, and the Indian state of Kerala stand out in this regard. The case of Morocco, cited earlier, is particularly encouraging. None of these countries or regions has a particularly strong economy, but each of them set out to make educational improvements and did so dramatically. Other countries should take note.^{59,60}

⁵⁹ More on political will and on the value of promoting education appears in David E. Bloom, 'Universal Education and Human Progress', *Wide Angle Discussion Guide 2*. New York: Educational Broadcasting Corporation, 2004. 15-17.

⁶⁰ See also, Javier Corrales (2005), 'The State is Not Enough: The Politics of Expanding and Improving Schooling in Developing Countries', Working Paper of the Project on Universal Basic and Secondary Education, September, Cambridge, MA, American Academy of Arts and Sciences.