

# Higher education and international development

David E. Bloom\* and Henry Rosovsky

*This article summarizes the recent report of the Task Force on Higher Education and Society. It outlines the complex and formidable problems facing most developing world higher education systems, noting that these problems are likely to become ever more evident as demographic factors, the knowledge economy, and globalization place increasing demands on students, institutions, and societies. Tackling these issues requires a move away from the ill-founded view propagated by many economists that higher education provides a lower return on investment than primary and secondary education, and a recognition of the wider benefits that having a well-qualified workforce confers. The article highlights the importance of good governance and the adoption of a systems approach to the promotion of higher education. It also stresses the importance to developing countries of offering high-quality general education programs and building teaching and research capacity in the areas of science and technology.*

INDIA can boast of some extraordinary achievements in the sphere of higher education. Its Institutes of Technology, the Indian Institute of Science and the Indian Statistical Institute, for example, are internationally renowned, and its software engineers, doctors and scientists are internationally sought after. However, while the higher education situation in India is healthier than in most developing countries, these headline institutions are exceptions to the rule, which is one of under-provision and low quality. The Task Force on Higher Education and Society (TFHE) found that, while India's tertiary enrolment rate of 613 per 100,000 inhabitants compares favourably with many sub-Saharan African countries (with enrolment having grown by nearly 40% between 1991 and 1997)<sup>1</sup>, it falls well below the averages of other developing regions such as Latin America (1638) and the Middle East and North Africa (1465) and pales by comparison with Europe and Central Asia (2436) and the United States (5339)<sup>2</sup>.

The TFHE was convened in 1999 and brought together educational experts from 13 countries to explore the future of higher education in the developing world<sup>3</sup>. The Task Force's report, 'Higher Education in Developing Countries: Peril and Promise'<sup>1</sup>, published in 2000, assesses the current state of higher education with a particular focus on longstanding problems, new realities and areas for reform<sup>4</sup>. The report is timely. Whereas the Industrial Revolution placed an emphasis on the basic and secondary education required for the bureaucratic and

skilled labour jobs that it created, today's knowledge revolution, as J. N. Tata foresaw over a hundred years ago<sup>5</sup>, demands both the pursuit of knowledge and the highly specialized skills that tertiary education is designed to foster. The TFHE report attempts to open up debate on the importance of higher education to the developing world, and its findings provide a salutary warning against complacency. This article is intended both to summarize the main points of the TFHE report and present the authors' own independent and evolving views on the importance of higher education to developing countries.

The Task Force observed that of the roughly 40 million higher education students in developing countries, relatively few are enrolled in truly high-quality programmes. The large majority face many problems. They are taught by poorly-qualified, poorly-motivated and poorly-compensated faculty, struggling with inadequate facilities and outmoded curricula. The secondary education system has often failed to prepare these students adequately for advanced study – and, once on campus, political activism, violence, cheating, corruption and discrimination can undermine their progress. Moreover, in many developing countries, including India, there has been a proliferation of 'fake universities'. Some countries, including, for example, El Salvador, have acted to close such harmful institutions. India's own University Grants Commission has warned students to avoid them<sup>6</sup>.

Even more disconcerting for the Task Force was the realization that, if changes are not made, the performance of the developing world's higher education systems seems likely to worsen. Three interlinking factors are at work here. First, the burgeoning *demand* for higher education. Second, the growing importance of *knowledge* in the modern world. And third, *globalization*.

David E. Bloom is in Harvard School of Public Health, 665 Huntington Avenue, Boston, Massachusetts 02115, USA and Henry Rosovsky is in Loeb House, 17 Quincy Street, Cambridge, Massachusetts 02138, USA.

\*For correspondence. (e-mail: dbloom@hsph.harvard.edu)

The thirst for tertiary education is testimony to the success of primary and secondary schooling systems. More and more people are receiving a solid grounding, but there is a growing recognition that in the knowledge economy, a degree is a *basic* qualification for many skilled jobs and higher education can no longer be confined to a tiny, privileged elite. Added to this thirst for knowledge and skill are demographic realities. Most developing countries have large 'baby boom' generations, due to the decline in fertility rates in recent years. As this baby boom generation grows up, there will be an increased cohort of young adults who feel the need for advanced education. This challenge, depending on how it is faced, can become either a problem or an opportunity. The baby boomers will keep aging and, as the West struggles to cope with its own increasingly aged populations, the developing world will have access to a 'demographic dividend' as a rising proportion of workers supports a falling proportion of dependents. This dividend can only be collected, however, if these workers have the education to create, seize and exploit new opportunities.

Developing countries, therefore, cannot simply focus their attention on improving the *quality* of their higher education systems. Efforts and resources must be directed towards increasing the *quantity* of education on offer and expanding it to those who come from disadvantaged backgrounds. Such expansion must be carefully planned, however, for the current lack of planning is leading to a proliferation of new institutions – many of them private, most of them poorly focused and some doing little more than preying on the aspirations and assets of well-intentioned students and their families.

Second, developing countries face the problem that across the world, the importance of knowledge is growing. Rich countries have so far shown themselves to be in a better position to steer their higher education systems in the direction of providing what will be needed in tomorrow's world. The knowledge economy is reinforcing and further magnifying income differentials that are already large by historical comparison. Information technology has some countervailing potential – but so far its promise has been realized predominantly in rich countries.

The third factor – globalization – adds to these difficulties. Globalization occurs through four principal channels: movements of goods, capital, labour, and ideas. Its potential benefits are huge but, so far, these benefits have been delivered mainly to the rich world and to East Asia. Globalization increases the ability of rich countries to compete for talented students and faculty and focuses these students' attention on the opportunities of the North, not the South. Globalization is also making the world economy increasingly competitive and increasingly unforgiving of laggards. The North's practice of draining, training and retaining the best brains (India has had some success in counteracting the brain drain, but Silicon Valley still remains a goal for many of its brightest students) clearly

undermines the South's ability to compete in business and industry – as well as weakening its chance of building the better government and higher education systems that are essential to it making significant progress on a whole range of development issues.

Confronting these longstanding problems and new realities requires addressing three overarching questions: First, what is the role of higher education in supporting and enhancing the process of economic and social development? Second, what are the major obstacles that higher education faces in developing countries? Third, how can those obstacles best be overcome?

Insight into these questions can be found by examining five broad topics, some of which have received remarkably little attention in the past: Higher education and the public interest; systems of higher education; governance; the importance of general education; and science and technology.

### The public interest in higher education

Quality higher education has not traditionally been a key goal for many international institutions, including the World Bank, and many governments have so far placed primary and secondary education ahead of tertiary institutions in terms of funding priorities.

Modern disregard for higher education has been led by economists, who have generally relied on a simplistic and misleading way of assessing the return on investments in higher education. The basic flaw has been to measure the return on education exclusively through wage differentials. The method has involved comparing the average earning power of those workers who have no education, those who have been to primary school, those who have completed secondary school, and those with a university degree. These differentials are then set against the incremental amounts invested in their education to calculate a rate of return. The results generally suggest that higher education yields a lower return than primary or secondary education – and they have been used to justify the skewing of government budgets (and development funds) away from higher education institutions.

However, higher education clearly confers benefits above and beyond enhancing the incomes of those who receive degrees. (The same is true of basic and secondary education, though the source and magnitude of the benefits may differ.) Many of these benefits take the form of public goods, such as the contribution of higher education to enterprise, leadership, governance, culture and participatory democracy (see TFHE report). These are all vital building blocks for stronger economies and societies and all routes by which the benefit of investment in higher education multiplies throughout society.

Countries need primary, secondary *and* tertiary education. All three are vital to human, social, and economic

development and all three are in the public interest. Education should not be thought of as a zero-sum game, where basic education is pitted against advanced study. Education is a positive-sum game. More of it is needed, and of higher quality, at all levels.

A focus on the public interest in higher education has two further implications. First, market forces alone will not deliver vital public goods. Markets are moved by profit and usually focus on the short-term. Private interests overlap, but only partially, with a society's long-term interest in accumulating and imparting knowledge and its capacity for generating new knowledge. This observation is especially true with respect to the basic sciences and the humanities, vital subjects the market will never deliver optimally because there is not enough money to be made. Markets, on their own, will not deliver educational access for all, either. They will cater mainly to the privileged, creating education for the elite, not the masses. The public's representative – government – must be prepared, therefore, to protect the public interest. This does not mean that governments should crowd other players out. But it does mean that government must be prepared to act as guide, facilitator, guarantor of standards, funder (in some areas), strategic planner and regulator.

The second implication of a focus on the public interest concerns the oft-repeated argument that public investment in higher education magnifies social and income inequality because university graduates – the future elite – are already part of the current elite and therefore not deserving of public subsidy. This view has some merit, but it is not decisive. Higher education confers great benefits on society as a whole. It would be narrow-minded and counter-productive for a society to forego those benefits simply because they are not distributed equally. Society must encourage people to pay as much for their education as they are able to, but it should avoid undue harm to itself in the process.

In addition, it must be remembered that higher education is one of the most powerful mechanisms societies have for upward mobility: it has enormous potential to promote prosperity among people with talent and motivation, irrespective of their social origins.

Subsidy, therefore, is needed, but the government should only spend its very limited resources in areas that will not be funded by others. This means subsidy when bright but disadvantaged students cannot pay or in areas where the market will not provide.

### Higher education systems

Thinking about higher education as a system forces countries to examine the structure and operation of higher education institutions in concert, not just individually. A higher education system encompasses everything from

public research universities to private vocational schools. Countries need to address the place of these institutions vis-à-vis each other, as well as their links to the rest of the education system and the broader society. Such a perspective lends itself naturally to the development of a rational system of higher education in the public interest, rather than the poorly coordinated structures that are growing up haphazardly because nobody is dedicating themselves to, or taking responsibility for, the big picture.

Effective systems are supervised, but are not controlled, micromanaged or manipulated politically by a government. They are *explicitly* stratified, with different types of institutions dedicated to different missions. A technical college is not better or worse than a research university. It is *different* – and it should focus on achieving a clear set of specialized objectives, while adhering to rules that are appropriate to its capacity and role. Excellence in higher education is only possible when this realization is built into the very fabric of the system.

A higher education system must value the contribution of each of its specialized institutions at the same time as it blends them together into a powerful force. India has one of the largest higher education systems in the world – one that is well-known for producing well-qualified graduates, particularly in the sciences<sup>7</sup>. The country boasts one of the largest virtual learning institutions in the world, the Indira Gandhi National Open University; some of the most respected engineering courses in the world at the Indian Institutes of Technology, and the widely respected Indian Institutes of Management. These successful specialist institutions should not be seen in isolation, but should instead serve as models both for future institutions and for the higher education network as a whole. Only when these colleges are driving the whole system as well as their own agendas will overall tertiary education in India begin to advance towards developed-world levels.

### Governance

Many of the people who gave evidence to the Task Force pinpointed governance as the key problem impeding the effectiveness of higher education institutions. Governance encompasses the arrangements – both formal and informal – that allow the higher education 'team' to function. The Task Force found that academic freedom, autonomy, the need for monitoring and accountability and meritocratic selection are the keys to good governance. Tools that advance good governance range from specific mechanisms for hiring and promoting faculty and appointing university administrators, to boards of trustees, faculty councils, institutional handbooks and visiting committees.

Good governance is not sufficient, but it is necessary for quality higher education. But the tools and principles of good governance cannot be blindly transported from either the public or private sector and then applied to

higher education. Higher education institutions are different – both from large seniority-based government bureaucracies and from commercial enterprises, with their focus on maximizing short-term profit. Higher education institutions need to be prepared to learn from other organizations – but must always adapt new solutions to their own needs.

### General education

General education or ‘liberal education’ as it is also known, emphasizes the development of the whole individual and not just his/her occupational training. It highlights the ability to think, communicate and learn; and to adopt a broad historical, comparative and disciplinary perspective on different issues. It is a foundation for later, more specialized, study.

Developing countries can benefit from the introduction – or in a few cases, the expansion – of high-quality general education. In a few countries, including India, an elite segment of the population already receives such an education, either in secondary schools or universities. Such an education is not for all students, but it is in each country’s public interest to have individuals who can operate at a high intellectual level in rapidly changing times – whether that involves negotiating with the IMF or multinational corporations, deciding what AIDS drugs to import or acting to develop a national legal system that can robustly protect fundamental human rights.

The content of general education curricula will naturally vary across countries. India, for example, should not blindly adopt the conception that exists in Britain or the US. Designing a general education programme offers the opportunity to ask fundamental questions about what matters to a particular society. The outcome of this exercise and also the process itself, is likely to be of great value. It will help energize the whole higher education system – and, in time, change the way a society thinks about itself, too.

### Science and technology

Science presents a unique set of challenges for universities across the world. First, science is, itself, a public good. Basic scientific inquiry often needs huge investment to deliver long-term, but highly uncertain benefits. The market has a poor record at funding this research, especially when the benefits will be felt by the poor more than the rich. As has often been noted, in today’s world it can be easier to find funding for research into a new dandruff shampoo than it is to try to develop a cure for malaria.

Second, the way that scientific knowledge is produced is changing rapidly. Increasingly, science is carried out across organizational and disciplinary boundaries, it involves public and private sector participation and it is

often directed toward solving a strategically important problem.

Third, scientific progress is leading to growing uncertainty, rather than certainty. The recent outbreak of foot-and-mouth disease in the UK, where scientists and farmers were diametrically opposed in their attitudes towards both the reasons for the spread of the disease and the tactics for containing it, provides a good example of some areas of society’s declining trust in science. The relationship between science and society is becoming increasingly vexed because increasingly experts must admit that they do not know all the answers.

These three factors – science as a public good, changing modes of knowledge production and a growing climate of uncertainty – mean that universities must be substantially more flexible and fleet of foot if they are to fund science adequately, pull together high-calibre scientific teams, build curricula relevant to modern societies and garner increased public support for their scientific research.

These problems are compounded in many developing countries, where the science and technology base is currently low and the gap to the wealthy industrial countries is growing. Developing such a base is no longer optional, but is becoming mandatory for all countries trying to compete in the global knowledge economy.

In some developing countries, the science and technology base will be useful because of the new discoveries developing country scientists make. Some of those discoveries could be commercialized by the private sector, while others might be exploited by public or nonprofit entities.

More broadly, a strong science and technology base is important to low- and middle-income countries because it puts them in a stronger position to select and implement existing technologies and to adapt them to local circumstances. From biotech to nanotech, information technology to pharmaceuticals, science holds the power to make a dramatic difference to quality of life in developing countries, but only if their higher education systems can help, guide and control its development.

In terms of scientific innovation, India has an impressive record. For example, the rate of increase of patent applications was almost identical in India and the US between 1986 and 1996. In terms of scientific papers published, India ranks among the top 10 countries in the world, although on a per-capita basis it is low compared to developed countries. Beyond its well-known software industry serving the international market, India has certainly been able to direct its technological expertise toward useful domestic inventions. A dramatic example of this is its successful effort to counteract high rates of maternal mortality in rural areas caused by lack of access to blood transfusions. This problem inspired the development, in one medical research centre, of low-cost plastics that could resist the inherent corrosiveness of blood

and be used for storing blood. International sales have helped to subsidize local use of the product.

Indian universities, as noted earlier, have produced a large number of graduates with good technical qualifications, but India nevertheless faces potential labour shortages in the software industry<sup>8</sup>, so the country is likely to have to redouble its efforts. The head of the National Association of Software and Service Companies has said that information technology companies could absorb even a ten-fold increase in the number of trained computer professionals.

The case of genetically-modified (GM) food offers a pointed example of the importance of science and technology education for developing countries. GM food potentially offers a range of important benefits: from improving crop yields, to increasing crop resistance to droughts and pests, to improving the nutritional value of familiar foods, to using those foods to create edible vaccines against common diseases, to reducing the need for environmentally-unfriendly chemical fertilizers. The risks, however, are also manifold. For example, such foods may create significant new allergens, unwittingly transfer existing allergens to different foods, or even make many foods inedible; cross-breeding between genetically-modified crops and undesirable vegetation could also lead to the creation of 'monster weeds' whose control, if possible at all, would require the application of larger amounts of yet more poisonous and environmentally deleterious chemicals; and growth-enhanced fish may deleteriously alter the aquatic environment for other fish. Beyond the technical risks, fears have also been raised among the public concerning monopolized food markets and deeper control of world food production by First World multinational corporations.

GM foods are thus creating an enormous and increasingly urgent need for a new body of technical expertise throughout the world. Developing countries will need this expertise if they are to take advantage of the benefits of GM foods while seeking to minimize the risks. The situation is especially complex since the risks involved seem to be of low probability events that could have catastrophic impact. Higher education is the natural sector for societies to rely upon as repositories and imparters of this expertise. But this requires substantial investments in infrastructure and training, connectivity to the world stock of knowledge, university-industry cooperation and international cooperation as well as stable long-term commitments to all of these. It might also be noted that the example of GM foods raises many complex issues that go beyond science to include matters related to ethics, public

regulation, business practice, community life, globalization and world governance. It is hard to imagine countries addressing these issues effectively without the leadership, or at least the aid, of individuals with a strong general education.

## Conclusion

Higher education is extremely important for society. It has phenomenal transformative power, both for individuals and whole societies, with the prospect of substantial benefits over long periods of time. Unfortunately, higher education in developing countries faces a legion of problems. The obstacles are certainly formidable, but they are not insurmountable. A grand plan for the whole of the developing world would be destined to fail in most countries – cultures, histories, politics and economies differ, and higher education systems are different, too. The necessary vision, political will and managerial skill can only be found at the national and local levels.

William Butler Yeats said that 'Education is not the filling of a pail, but the lighting of a fire'. India can be justly proud to have lit the fire, claiming some of the world's oldest and most distinguished traditions of higher learning. Now, however, the country must look to the future if it is to regain the initiative: broadening and deepening the higher education base will enable India to make the enviable success of its premier institutions the rule rather than the exception.

1. UNESCO Conference on Higher Education in India, Paris, 5–9 October 1998.
2. UNESCO data for last year available, cited in World Bank/UNESCO Task Force on Higher Education and Society (2000), March 2001.
3. The Task Force members consisted of Mamphela Ramphele (South Africa; Co-Chair), Henry Rosovsky (USA; Co-Chair), Kenneth Prewitt (USA; Vice-Chair), Babar Ali (Pakistan), Hanan Ashrawi (Palestine), José Joaquín Brunner (Chile), Lone Dybkjaer (Denmark), José Goldemberg (Brazil), Georges Haddad (France), Motoo Kaji (Japan), Jajah Koswara (Indonesia), Narciso Matos (Mozambique), Manmohan Singh (India) and Carl Tham (India).
4. The Task Force report is available at [www.tfhe.net](http://www.tfhe.net)
5. See Indian Institute of Science website. Available at <http://www.iisc.ernet.in/about>
6. Press release, Indian Department of Education, 1 May 2001.
7. UNESCO International Bureau of Education, World data on Education.
8. BBC News, 15 April 2001.

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