



Contents

Executive summary	2
Higher education environment overview	3
Social, demographic and economic background	3
Institutions, policy and governance	3
Allocation of resources	4
The higher education landscape	5
The education function	6
Education offering	6
Enrolment, access and equity	6
The role of infrastructure and ICT	8
Higher education outputs	9
Research	9
Workforce	10
Policy levers – interventions	12
Cases of structural reform or transformation	12
Private-sector involvement	12
Other specific interventions	12
Conclusion	14
Endnotes	15



Higher education case studies

Pakistan

Executive summary

Pakistan's higher education sector has seen dramatic growth over the past two decades, from a student population of just 68,000 in 1993¹ to 1.3m in 2012.²

However, progress has been hampered by a lack of funding as well as political reluctance to invest in the sector.³ Even the elite institutions suffer from a shortage of teachers and resources, and universities are often forced to recruit students without PhDs to teach undergraduate classes. In addition, as government subsidies fluctuate, the need to raise income through fees means that admissions standards are often excessively relaxed in order to increase numbers. This has a potentially detrimental effect on both the quality of the educational experience and the perceived value of a degree.

Lack of engagement between higher education institutions and business and industry means that graduates are frequently underprepared for the workplace. This leads both to individual difficulty in finding suitable employment and to a shortage of suitably qualified employees to meet the needs of the economy. Guidance in the establishment of strong collaborative relationships between universities and employers could have a significant impact.

Higher education provision is currently distributed strongly in favour of the two most prosperous provinces, Punjab and Sindh—between them, the two are home to 85 of the country's 139 universities and degree-awarding institutions (DAIs).⁴ Within these provinces, the vast majority of institutions are located in large cities. Aspiring students from poorer provinces or rural areas, who cannot afford to move away from home for their education, therefore frequently cannot choose to study. Distance learning is providing a solution for some, and the spread of low-cost broadband services has enabled Pakistan to embrace this as an option. However, as Pakistan ranks 108th out of 148 countries for the percentage of households equipped with a personal computer (PC)⁵, significant swathes of the population are unlikely to benefit from a revolution in virtual education.



Higher education environment overview

Social, demographic and economic background

Almost two-thirds (64%) of Pakistan's growing population is under the age of 30⁶, while 20m people in the country are aged between 15 and 19 years.⁷ The potential market for higher education is therefore large and expanding.

Although one-half of Pakistan's workforce is still employed in the agricultural sector, long seen as the centrepiece of the country's economy, its significance is diminishing as other areas grow in importance. Over 50% of the economy is now devoted to services, and one-quarter to industry. As a result, better-skilled and more knowledgeable employees will be increasingly in demand. As yet, however, the bulk of Pakistan's exports still rely on a low-skilled workforce, while government departments are the country's largest single employer.

Economically, Pakistan has tended towards low growth, low productivity and high inflation. University degrees are seen as an opportunity for advancement, although much of the perceived advantage is social rather than financial, as the economic return for a degree is relatively low.

Female participation in higher education has increased substantially over the past 20 years, and women now represent nearly one-half of total students enrolled in universities.⁸ Nevertheless, the vast majority of Pakistani women remain uneducated, and female students have come under attack from militants.

Institutions, policy and governance

Tertiary education in Pakistan has been overseen since 2002 by the Higher Education Commission (HEC). Created with the aim of boosting educational standards, the HEC is an autonomous body with a wide remit, including responsibility for attesting degrees; revising curricula at public universities; enhancing the infrastructure of higher education; awarding foreign and local scholarships; supporting patent filing; pushing technological reforms; and building collaboration between industry and universities. Although it is meant to be independent, the HEC has been politicised from the beginning, and its chair has to date always been a political appointee.

Despite the nominal oversight of the HEC, institutions vary significantly in their governance and there is no "one size fits all" model. This means that, even when potentially effective policies are introduced, they are hampered by inconsistent implementation across the sector.

The higher education sector encompasses a wide range of institutions. At the top of the hierarchy are the country's elite public and private universities. The distinction between the two is one of management structure rather than funding—all universities receive some funding from the HEC and must raise additional finances themselves. The quality and cost of private universities varies enormously, and the few outstanding institutions tend to be beyond the financial reach of all but the wealthiest.



Higher education case studies

Pakistan

Teaching-led universities, which charge lower fees, have more relaxed admissions standards, and offer a narrower range of academic choice, from a second tier. The spread of these institutions across the country over the past 20 years has made higher education accessible to students beyond urban centres, and is largely responsible for the significant growth in enrolment Pakistan has witnessed.

The third layer is formed by low-cost vocational colleges, which have little oversight and tend to concentrate on management and information technology (IT) courses.

The National Education Policy (NEP) was introduced in 2009, with the aim of addressing access, equity and quality of education at all levels. Its goal is to connect the internal development of tertiary institutions with Pakistan's broader societal and industrial development, to encourage universities to build leadership communities.

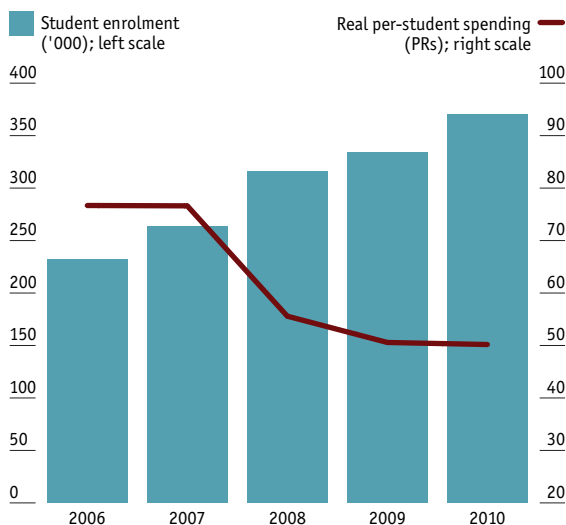
Allocation of resources

When the HEC was established in 2002 under the then president, Pervez Musharraf, its budget was intended to grow incrementally. However, since the fall of Mr Musharraf's regime in 2008 governmental funding of higher education has fluctuated, and has not enjoyed the protected status it seemed to have secured. Even Pakistan's general education spending is fairly low, at 2.1% of GDP—the comparable level in India is 3.4%.⁹

As the budget has ebbed and flowed, the HEC has been forced to source its funding from elsewhere, including loans from international donors, while institutions have been compelled to generate their own income, primarily through student fees. However, all universities, whether public or private, remain subsidised to varying degrees.

Although lesser reliance on state support can be seen as a positive, many universities have responded to financial pressure by increasing the number of students they accept, so as to raise the amount brought in by fees. This has led to overcrowded classrooms, pressure on already limited resources, and, in some cases, a relaxation of admissions standards.

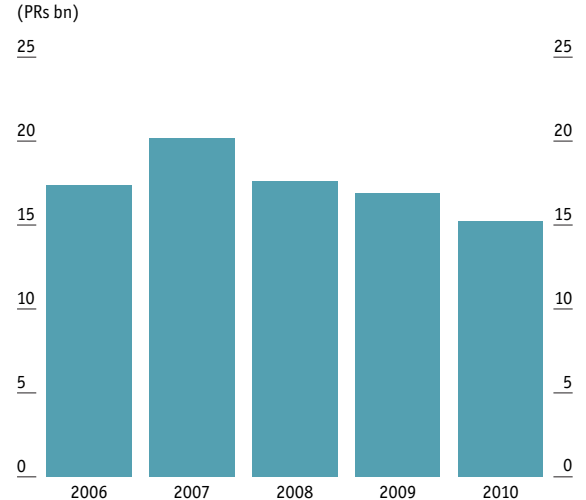
Enrolment vs real per-student spending in higher education



Note. Students in public institutions only; recurrent and development expenditure included.

Source: Higher Education Commission of Pakistan.

Real total higher education spending



Note. Includes recurrent and development expenditure.

Source: Higher Education Commission of Pakistan.



Under the current prime minister, Nawaz Sharif, six government programmes were approved in 2013 with the aim of supporting access to affordable education, soft loans and skill-based learning.¹⁰ Increased higher education investment has been reported, with the budget for fiscal year 2013/14 (July-June) allocating PRs57.4bn (about US\$560m)¹¹ for the expansion of higher education enrolment, scholarships and infrastructure development.¹²

The higher education landscape

Universities and DAIs make up a small proportion of the higher education sector in Pakistan, with a total of just 139 in the country as a whole.¹³ Of these, 57% are public and 43% private. However, 86% of the students enrolled in Pakistani universities attend public institutions.¹⁴

An alternative route to degree status is offered by 1,397 “degree colleges” or “affiliated colleges”.¹⁵ Usually poorly funded and limited to undergraduate-level education, these colleges maintain links with a given university to offer degree courses in a limited range of subjects. This provides students who cannot afford to attend a chartered university to sit exams that are recognised by one.

*Deeni madaris, or madrassas, also play a significant part in further education. Although their principal focus is on Islamic studies, they also offer wider academic syllabi to diploma level. There are currently 13,075 madrassas in Pakistan.*¹⁶

A total of 3,257 technical and vocational institutions, of which 70% are private, offer courses preparing students for employment in specific sectors.¹⁷

Distance learning, which aims to meet the needs of potential students who are unable to access higher education owing to geographical or financial constraints, is a rapidly expanding sector. Some universities, such as Allama Iqbal Open University and the Virtual University, exist solely to offer distance-learning opportunities, while others run the option alongside more traditional approaches. New colleges have also been established to administer the distance-learning opportunities offered by the University of London.

The Allama Iqbal Open University and the Virtual University have pioneered the use of Internet learning tools in Pakistan, tailoring seminars and lectures to the needs of their growing number of students. More widely, the country has embraced video-conferencing as a means of addressing widespread teaching shortages, enabling a single lecturer to reach students at multiple campus locations. Leading universities have also introduced “massive open online courses” (MOOCs) as a form of distance learning, while the HEC has created a portal providing access for students from a range of universities and colleges to academic journals from all over the world.

The arrival of broadband Internet has enabled this dramatic growth in access to learning opportunities, but its reach is still limited—Pakistan ranks 108th out of 148 countries for the percentage of households equipped with a PC.¹⁸ However, the enthusiasm with which distance learning has been taken up in Pakistan implies that it has the potential to be a crucial part of the education picture.



The education function

Education offering

Pakistan's higher education sector has traditionally placed a heavy emphasis on engineering, a focus which in recent decades has broadened to include IT and management. Most institutions still concentrate on these areas. However, as the sector has expanded in the past decade, more students have taken up the opportunity to study the arts, humanities and social sciences, which arguably meet the needs of the market less effectively.

The Ministry of Finance highlighted in its *Economic Survey 2012-13* the necessity of technical and vocational education to support the needs of emerging sectors. Vocational colleges and training schools currently offer training in education, agriculture, textiles, architecture and other skills that feed directly into the economy.

Developing these skills is essential in both individual and national terms. The UK's Department for International Development (DFID) has jointly funded a £55m programme in partnership with the Punjab provincial government, providing skills training for 250,000 Pakistanis who would not otherwise be able to afford it. In addition, the British Council is set to relaunch its Skills for Employability programme in conjunction with Pakistan's National Authority for Vocational and Technical Education.¹⁹

General universities, such as the University of Punjab (which has 36,000 students)²⁰ or the University of Karachi (24,000 students)²¹, offer a broad range of subjects, but many institutions are more specialised. The National University of Sciences and Technology (NUST), for example, is one of Pakistan's top-ranked universities and focuses solely on the sciences. Similarly, Lahore University of Management Science (LUMS) is the country's top social sciences university. Medical schools, business schools and agricultural and textile colleges also fall into this category. There are also a significant number of women's colleges, most of which were originally finishing schools but have since become fully fledged universities.

Undergraduate degree courses usually take two years for arts, humanities and science subjects, but can take four years for subjects such as technology, engineering, pharmaceutical sciences and agriculture. This mismatch with the Western norm of four years has left many students underqualified to pursue programmes abroad; some provinces have tried to address this by introducing four-year courses. But a doubling of the time spent studying, rather than earning, would put higher education even further out of reach for many Pakistanis.

Enrolment, access and equity

The vast majority of Pakistan's universities are in its cities, and their distribution is weighted heavily in favour of more prosperous regions. Karachi, the country's largest city, has 37 universities, while the rest of Sindh province excluding Karachi has just 11. There are 30 universities in Lahore, 18 in



Islamabad, 13 in Peshawar and just four in Quetta.²² In each province, large rural areas have no higher education institution at all within several hours' drive.

Enrolment in all forms of higher education has shown rapid growth over the course of the country's history, from a few hundred students in the 1940s to over 1m today. This growth has accelerated over the past 12 years, a trend that has been linked variously to the growth of the urban middle class over the same period; the expanding availability of tertiary education thanks to an increasing number of low-cost colleges with modest admission standards; and rising female enrolment. However, this expansion of the student population has prioritised numbers over skills, with few institutions making any effort to foster critical thinking in their students. This failure contributes to a dearth of research and an absence of the creative development the economy needs to thrive.

Academic qualifications carry perceived advantages beyond career advancement. Socially, they confer prestige on an individual and his or her family, and the white-collar jobs they lead to are seen as more attractive than the alternative route through self-employment. They can also enhance an individual's marriage prospects, which is seen as one of the reasons for the rise in the number of women seeking further education.

Despite growing interest in higher education, it remains a minority pursuit in a country where approximately 45% of adults are illiterate.²³ Inadequate primary and secondary education ensures that few people are equipped to consider higher education at all.

This is particularly the case for women, who drop out of school earlier and at a higher rate, than their brothers, especially in rural areas. More than 50% of rural females who have ever attended school drop out without completing class five.²⁴ Many never begin school at all, owing both to cultural pressure and the threat of violence—in the past, girls' schools have been bombed by militants and individuals have been attacked. Conservative families who do send their daughters to school are often reluctant to extend their education to degree level, particularly when to do so would mean sending them away and exposing them to a coeducational atmosphere.

Cost is a major barrier for both men and women. For many, remaining out of paid employment for two-to-four years is not an option, even before the cost of fees is taken into account. Students from rural areas face the additional challenge of moving away from home to the nearest big city, which may be several hours' drive away. This represents a further financial burden and puts higher education still further out of reach for large numbers of people.

Very few students with disabilities are able to consider tertiary education. Few are sent to school in the first place, and the special schools that do exist have sufficiently low educational standards that their students would be unlikely to be equipped for further study.

Financial support has traditionally been limited to scholarships, which many public and private institutions offer to high-achieving students. Pakistan's financial sector has not yet opened itself up to lending to students, and in any case has little credit to offer in general. Around 1,400 students currently receive interest-free loans from the National Bank of Pakistan²⁵, while Punjab University students can apply for financial assistance through the Pakistan Bait-ul-Maal, the welfare arm of government.



Higher education case studies

Pakistan

Over the next three years the HEC plans to develop a student loan programme to provide help to students from low-income families. All institutions will be encouraged to establish student loan facilitation offices, with the aim of initially supporting 10,000-15,000 students.²⁶ The HEC has also introduced 40 financial aid offices so far²⁷ in both public and private universities, with the intention of eventually covering all institutions.

A fee-reimbursement scheme aimed at rural students was also introduced in 2014.²⁸

The role of infrastructure and ICT

The resources of Pakistani universities are limited. Libraries, for example, are either absent altogether or poorly stocked with dated material, while labs, classrooms and lecture halls are overcrowded.

Pakistan's enduring and deepening energy crisis places serious limitations on the use of technology in universities, and the country has been slow to make use of it as an aid to learning. Electricity shortages, which afflict the country as whole, mean that some parts of the country are without electricity for up to 18 hours a day, and few universities can afford the private generators required to compensate for the blackouts. Classes are therefore frequently taught without lighting or cooling facilities, leaving the use of more sophisticated technologies far down the wish list.

Although low-cost broadband has made learning materials accessible to many more students than would otherwise be the case, Internet speeds remain low, impeding access to video-streaming. Distance learning, albeit an increasingly significant element in the higher education framework, is also hindered by the fact that many international courses use YouTube as a learning platform—the site is banned in Pakistan.²⁹

However, there is a growing appetite for the flexibility that Internet-based learning can deliver. Since 2002 the Virtual University of Pakistan has worked to meet this demand. A not-for-profit institution established by the government, the university was founded with the aim of providing affordable, world-class education to aspiring students all over the country. It now has more than 100 affiliated institutions providing infrastructure support to registered students in over 60 cities.³⁰



Higher education outputs

Research

Pakistan's research capabilities remain low. There are research centres based at a few higher education institutions or publicly funded organisations, and universities have traditionally been teaching-focused rather than research-led.

The University of Karachi has 23 research centres, while Shaheed Zulfiqar Ali Bhutto Institute of Science and Technology (SZABIST) has research centres focusing on renewable energy, biosciences and sustainable development.³¹ Quaid-i-Azam University, a publicly funded institution, has five research institutes in addition to its teaching faculty. Universities with a military association, such as NUST and the National Defence University, conduct research which feeds into the work of government.

LUMS remains at the forefront of private sector education with various research institutes and faculty connections to think-tanks globally. Case studies written at the institution's Suleman Dawood School of Business are used in universities around the world, in addition to MBA programmes in other Pakistani universities. However, a more regular flow of research is provided by individual consultants working independently, commissioned by foreign donors.

The establishment of Offices of Research, Innovation and Commercialisation in seven pilot institutions has demonstrated a resolution to foster the beginnings of a research culture, which is starting to filter through.

Over the past decade the country has managed to increase the number of PhDs and to raise the profile of Pakistani research, particularly in maths and engineering. The number of publications has also grown dramatically (records in the SCImago database rose from 800 in 2002 to 6,200 in 2011). That said, critics suggest that this reflects a focus on quantity over quality.

The Pakistan Programme for Collaborative Research brings together Pakistani academics and foreign researchers to encourage the development of joint research programmes and greater collaboration with universities abroad.

Despite recent attempts to improve its quality, research in Pakistan tends to be formulaic and lacking in analysis, synthesis or evaluation. A track record in research is rarely deemed necessary for an academic seeking employment or promotion. In the context of a strongly teaching-focused model of institution, and a shortage of higher education teachers, research is not seen as a priority.

Pakistani scholars who do have an interest in conducting research are more often encouraged to do so at a Western university. The HEC's scholarship programme has so far sponsored 2,529 students to pursue PhDs abroad³², while under the Split PhD programme academics from Pakistani universities conduct research at a foreign university and may choose where to submit their PhD.

Since 2005 the US and Pakistani governments have awarded over 70 grants³³ for scientists from their respective countries to work together on groundbreaking co-operative research in science and technology.



Higher education case studies

Pakistan

The HEC is also collaborating with the US Agency for International Development (USAID) on the creation of so-called Centres for Advanced Studies at four Pakistani universities. These will work with American universities to conduct applied research programmes in agriculture, energy and water, while maintaining strong links with the business community.

Given that research is not seen as a critical factor in an academic career in Pakistan, the limited research facilities that do exist often go unused owing to a lack of motivation, interest and knowledge. Universities lack the necessary links with industry to know where research would be of most value, and instead research topics are often repeated, becoming a sterile academic process rather than a source of innovation.

A lack of access to materials and resources, and of research skills, also hinder would-be researchers, and plagiarism is widespread.

Workforce

In 2006 a total of 380,773 students graduated from Pakistan's universities, and by 2009 this number had increased to 493,993.³⁴

Over the past decade Pakistan has generated increasing numbers of graduates, but without necessarily fitting them to the needs of the domestic economy. The strong focus on management, for example, results in an excess of management graduates with no understanding of anything more tangible. Students are also increasingly likely to study humanities and social sciences, disciplines valued in sectors such as development, the media and government. However, those positions are scarce and the economy is moving towards telecommunications, IT, oil and gas, and financial services. There is therefore a serious mismatch between the needs of the economy and the available manpower.

This mismatch affects both parties. Graduates in subjects that employers do not value find themselves forced into roles for which they are overqualified, or struggle to find work at all. Meanwhile, the needs of industry remain unmet, or employers are forced to train new graduates on the job.

The HEC has recently put in place a system of revising curricula on a three-year cycle to improve their relevance, but this has yet to be put into practice.

From an employer's perspective, graduates from the leading business and technology institutions are likely to fill most of the available slots at the banks and telecoms companies that make up corporate Pakistan. Engineering qualifications and MBAs are also in demand.

However, even students who, on paper, have more relevant qualifications frequently find that their knowledge and skills do not meet the needs of their prospective employers.

A major factor in the failure of higher education institutions to provide the employees that the market needs is the lack of interaction between universities and industry. There is almost no collaboration, and so academic staff remain unaware of the roles for which they are supposedly preparing their students, while industry fails to communicate its requirements.

New graduates who do meet the needs of the labour market may still struggle to find suitable employment owing to the tendency of employers to hire people they already know. The Pakistan



Investment Climate Assessment survey suggests that around 50% of firms hire employees through a network of friends and family.³⁵ One-half of all businesses are also estimated to work outside formal tax structures, meaning that there are few clearly defined graduate career paths. Many graduates have found that self-employment is the only route through which they can fully make use of their skills, and that this enables them to build businesses that offer a better rate of return than regular employment. However, a lack of entrepreneurial skills may be preventing the current generation from taking advantage of this path.

The average monthly wage in Pakistan has been estimated at US\$255.³⁶ New graduates can usually expect to earn this or higher, although an entry-level position in an established bank offers only slightly more than average. Newly qualified lawyers can expect to earn below the average wage until they begin to generate business for the firm.

Pakistan suffers from a significant brain-drain of young skilled graduates, with about 45,000 professionals migrating in the past 30 years (popular destinations nowadays include the US, Canada and Australia).³⁷ This is owing to unequal employment opportunities, job insecurity, discrimination in selection and better prospects abroad.



Policy levers – interventions

Cases of structural reform or transformation

The 18th Amendment to the Pakistani constitution, ratified in 2010, increased the autonomy of the country's four provinces. The impact this will have on education has yet to be determined. The HEC has so far resisted moves to devolve higher education to the provinces, citing concerns that smaller provinces would be adversely affected; that uniformity of standards would be difficult to enforce; and that educational appointments would be politicised.³⁸ The Supreme Court ruled in November 2011 that education was an obligation of the federal government from which it cannot absolve itself. However, political power is becoming increasingly regionalised, and higher education's federal standing remains under threat.

Private-sector involvement

The lack of interaction between industry and universities is a key factor in Pakistan's mismatch between its available workforce and the needs of the market. Although internships have become increasingly common, they tend to benefit graduates from the most elite universities or Pakistanis studying abroad. They are also frequently exploited as a source of cheap labour, but do provide interns with necessary "real world" experience.

Internships are not exclusive to the private sector: the National Internship Programme, established in 2008, provides unemployed graduates and postgraduates with government placements, offering them a chance to boost their skills and employability.³⁹

In-house training is also on the rise, with employers seeking to compensate for the gaps in the training provided by the higher education sector by educating their employees themselves—some going so far as to offer certification.⁴⁰ Although this ensures that the companies have staff who can meet their requirements, it does little to address the fact that universities are failing to improve the relevance of their own programmes.

Other specific interventions

Efforts are being made to enable more women from rural areas to enrol in higher education, through the establishment of all-women hostels providing subsidised accommodation in the big cities where most universities are based. Distance learning, which is of particular value to expanding access, saw total enrolment rise from 89,749 in 2002 to 229,794 in 2009.⁴¹

The HEC has also worked to expand access to education for those living in regions with poor provision. Sixteen new universities have been established, and plans are under way to create more for women only. In addition, 37 satellite campuses to existing universities have been created in smaller cities to allow students who cannot afford to relocate the opportunity to attend.⁴²



The higher education sector as a whole is heavily reliant on international donations, particularly in the form of scholarships. USAID aims to provide 21,000 scholarships to Pakistani students by 2018 to enable them to pursue degrees both in Pakistan and in the US.⁴³ To date, 10,000 of these scholarships have been disbursed. In addition, 600 Pakistani students have attended American universities on Fulbright scholarships over the past three years.

In the UK, 19 Pakistani students benefited from Chevening scholarships to pursue postgraduate degrees in 2013-14⁴⁴, while partnerships have been developed between 118 Pakistani universities and over 90 British institutions. DFID is also providing up to 1,000 postgraduate scholarships through LUMS over the next five years.⁴⁵



Conclusion

Rapid urbanisation in recent years has seen young people in Pakistan take up opportunities for further education in greater numbers than ever before. Growing access to technology has meant that increasing numbers of people in rural areas are able to take advantage of distance learning to enhance their skills and knowledge without the financial and social cost of a move to a big city.

Women have claimed their place in the growth of the higher education sector, to the extent that, at the University of Karachi, female students now outnumber men. Since 1993, when women made up one-fifth of the country's total number of students, their participation has steadily increased to make up nearly one-half of the total by 2012. As a result, the number of women entering the workforce has also grown, although the numbers remain proportionately low.

However, a drive for quantity over quality means that, although graduate numbers may be up, their skills often fail to match the needs of their potential employers. There is a rising provision of skills in arts, humanities and social sciences that fails to be effectively absorbed by the labour market. Meanwhile, even the more technical subjects suffer through a lack of engagement with industry.

A national strategy for higher education should prioritise lowering the barriers to access for women, the rural population and the poor. Targeted financial support mechanisms for students should be expanded and the sector needs to capitalise on the enthusiasm for distance learning. Addressing the inequity of the primary and secondary school system and infrastructure constraints (mainly electricity supply and access to the Internet) will be instrumental to expanding access.

Sustained funding should be matched by decisive quality assurance of training schemes. A constant dialogue between the private sector and educational institutions should be facilitated, so that curricula reflect more accurately the social and economic needs of the country. This collaboration should also be central to efforts to boost research and innovation.

If Pakistan is to educate its young people so that they can grow professionally, while providing industries with the necessary expertise, it is vital that higher education is recognised as central to economic growth. In turn, the education sector must target the needs of the world into which its students set out.



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Higher education case studies

Pakistan

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