**Quality higher education**

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In 2002, when the Higher Education Commission (HEC) was established under my chairmanship, Pakistan was around 400 percent behind India in terms of research publications per capita, according to the Web of Science. Fortunately, educational reforms that we introduced, and that were continued for the next decade, resulted in astonishing progress that has been applauded by neutral international experts.

The landscape of higher education changed dramatically between 2002 and 2008 so much so that Pakistan not only caught up with India but also overtook it in the year 2018. This is no small achievement as India had been investing in higher education since its very birth – this includes the visionary policies of Nehru who established the IITs and other good quality higher education institutions in the 1950s and 60s.

The single most important element that determines the quality of higher education is the quality of faculty. For this reason, when the HEC was set up in 2002 under my chairmanship, the highest priority was given to the training and recruitment of high-quality faculty in our universities.

After a rigorous screening process, some 11,000 students were sent to the world’s leading universities, and to attract them back on completion of their doctorate degrees, several important initiatives were introduced. First, a new contractual salary structure was introduced with the salaries of professors several times higher than that of federal ministers in the government. Second, students completing their PhD degrees could apply for research grants of up to $100,000 – one year before completion of their work.

Third, graduates would have jobs on arrival with the HEC paying the salary. Fourth, an excellent digital library was set up that provided free access to 65,000 journals and 25,000 textbooks through the Pakistan Educational Research Network (PERN) that connected all universities with high-speed internet. Fifth, free access to sophisticated instruments was provided. Sixth, grants were made available through a liberal research grants scheme – National Research Projects for Universities (NRPU) – to help young academics to win sizeable research funding. These and other such measures led to a 97.5 percent return rate of scholars.

To control plagiarism, specialised software was introduced, which controlled this problem to a great extent. However, this issue persists – to a small extent – both in India and Pakistan and other countries. According to an article published in 2019 in ‘Nature India’, 980 papers published by top Indian institutions, including those from the IITs, between 2000 and 2017, were fraudulent or plagiarised and had to be retracted. Between 2005 and 2021, 254 publications were also retracted from Pakistan. This is an average of 15 papers per year (about 0.1 percent to 0.3 percent retractions annually).

To promote blended education, a mirror website of the MIT Open Courseware was set up in 2005 when I was the HEC chairman, and many undergraduate computer science courses were downloaded, copied on CDs, and distributed to all universities. An exciting scheme for live distance education was also introduced by us with top professors delivering daily lectures which were listened to live and interactively across Pakistan. A major programme was initiated to attract our highly qualified Pakistan diaspora back to the country.

Some 600 eminent academicians returned and played a valuable role in uplifting the quality of higher education in the country. Split PhD programmes were introduced so that PhD students in Pakistan could do a split PhD with a part of their time being spent in good foreign universities under the supervision of eminent foreign scholars. Pakistan was soon recognised internationally for these efforts, and glowing tributes were paid in numerous articles written by the world’s leading educational authorities as well as by neutral experts of the British Council, World Bank, USAID, and UN. I was conferred the highest prize for institution-building by the World Academy of Sciences (Italy) and by the Austrian and Chinese governments.

Unfortunately, there was a sharp decline in the quality of higher education due to the actions of the former chairman HEC in the last three years which were condemned by 178 out of the 180 vice chancellors of different public and private universities, who participated in a recent event organised in Bhurban.

Prime Minister Imran Khan is interested in the development of science and higher education in Pakistan. This is reflected in several actions of his government to support the efforts of the PM Task Force of Knowledge Economy: First, after years of stagnation, the present government has announced a sizeable increase in the operational budget of universities by a grant of an additional Rs15 billion on top of the Rs66 billion previously allocated – this is an increase of about 23 percent.

Second, after a decade of neglect, the salary structures of the tenure track faculty have been increased by 35 percent for all and by 100 percent for the best faculty members. Third, the Pakistan-Austrian University of Applied Science and Engineering has been established which is the only university in the country (and possibly in the Subcontinent) with 100 percent PhD-level faculty. This university has been developed in collaboration with three Austrian and five Chinese universities – its academic session has already started. Two other such universities are now being set up in Sialkot and Islamabad.

Fourth, a huge scholarship programme of Rs13 billion has again been launched. Fifth, the research grants NRPU initiative that had been dropped by the previous chairman has been given a new life and some 1,200 research grants will be given to young faculty members across Pakistan this year. Sixth, centres of excellence in new and emerging technologies such as artificial intelligence, nanotechnology, materials engineering etc are being set up across Pakistan, and 26 projects worth over Rs67 billion have already been approved.

Seventh, the development budget of the Ministry of Science and Technology has now been increased by about 600 percent by the Knowledge Economy Task Force projects after years of stagnation. Eight, IT education is being prioritised. The visionary new policies proposed by the IT/Telecom task force of which I happen to be co-chairman have resulted in a 50 percent growth of IT exports from $1.3 billion to $2.1 billion during the last one year, and a huge revival of the IT industry is underway.

A silent revolution is now finally underway in Pakistan. The credit for this goes to Prime Minister Imran Khan and his whole-hearted support to three important task forces – the Science and Technology Task Force, the IT/Telecom Task Force and the Knowledge Economy Task Force – that are being steered by us.

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