**Silent revolution in education**

Atta-ur-Rahman

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As a result of numerous projects undertaken by the technology-driven Knowledge Economy Task Force set up by Prime Minister Imran Khan in early 2019 under his chairmanship, the landscape of higher education, science and technology are presently undergoing a major positive change.

There has been a huge 600 percent enhancement in the development budget of the Ministry of Science and Technology over the last three years and projects of over Rs100 billion have either been approved or are in the final phase of approval. I happen to be the vice-chairman of this task force and the members include the federal ministers of finance, planning, education, science & technology, and IT/Telecom.

The fact that the prime minister himself oversees the working of this critically important task force and personally intervenes if matters are blocked by the bureaucracy gives it the political clout needed to forge ahead quickly in our plans to change the strategic directions of Pakistan from a weak natural resource based economy to a powerful knowledge economy. It is only by doing so that we can unleash the creative talent of our real wealth, our youth, through investments in education, science, technology and innovation/entrepreneurship.

It was under the Musharraf regime that the nation witnessed the first major thrust forward in science and technology, when I succeeded in convincing Gen Musharraf that the future of this great nation lay in investments in higher education, science & technology, thereby paving the way for developing a strong knowledge economy. The result was a 6000 percent increase in the development budget for science when I was the federal minister of Science, IT/Telecom. Later, when I became the founding chairman of the Higher Education Commission, a similar budgetary enhancement was witnessed in the budget of the higher education sector.

The programmes launched during the first decade were largely focused on strengthening the scientific manpower of the country, strengthening social sciences and linking universities with industry. There was a complete transformation of the IT sector with thousands of the brightest young men and women being trained at PhD level in leading universities abroad, and over a hundred computer science departments being strengthened with faculty and facilities. The first IT policy and implementation strategy was approved under my leadership in August 2000 which laid the foundations of the development of this important sector.

There was razor-sharp focus on the quality of education in universities rather than numbers during that period with the top priority being given to high quality faculty development. About 11,000 students were sent abroad to leading universities in the US and Europe for PhD level training. To ensure their return, salaries of professors were increased under a new contractual salary structure so that they became four times the salaries of federal ministers. However, to ensure top quality, there were six international evaluations by foreign experts introduced to judge the quality and productivity of the research output of the persons appointed. Each student abroad was offered the opportunity to win research grants of up to $100,000 for which they could apply a year before their return.

The state of university libraries was pathetic before the formation of the HEC. A digital library was therefore created that provided free access to 65,000 textbooks and 25,000 international journals. The Pakistan Educational Research Network was established, connecting all universities with high speed internet access. All students returning after PhD degrees from abroad were guaranteed jobs in universities. These and a host of other measures resulted in an astonishing 97.5 percent return rate of scholars sent abroad.

To boost the IT sector, I persuaded the CEO of Intel to join hands with Pakistan, with the result that some 220,000 school teachers were trained with funding from Intel in 70 districts of the country. To boost mobile telecommunications the ‘Calling Party Pays regime was introduced. Previously subscribers had to pay for receiving calls. The result was an explosive growth in the mobile phones sector from 200,000 phones in the year 2000, now to about 180 million phones. The internet was also rapidly spread across Pakistan and our first Satellite PakSat 1 placed in space, thereby securing the only slot available in space for this country.

The amazing progress made in a short period was applauded by the UN and other experts and Pakistan was considered a model for developing countries to follow. In an article, ‘Another BRIC in the Wall’, the world’s leading ranking agency Thomson Reuters applauded the quality of research publications that were being published in international journals as compared to the four BRIC countries – Brazil, Russia, India and China – and concluded that the highest percentage of good quality highly cited papers was from Pakistan as compared to the BRIC countries. Some pseudo experts have tried to downplay these developments by publicising that some 258 papers have been retracted over the last 20 years. However about 20,000 papers are published annually from Pakistan in international journals and retraction of a small fraction of 0.1-0.3 percent of these is normal and comparable to the retraction rate from other developing countries such as India.

A number of excellent foreign engineering universities are now being established in Pakistan through our efforts. The Pakistan Austrian University of Applied Science and Engineering started functioning last year in Haripur in collaboration with eight foreign universities from Austria and China. Two other similar foreign engineering universities are now being established in Sialkot and Islamabad in close collaboration with local industry to help develop a strong knowledge economy. The focus of these new universities is on the new and emerging technologies such as AI, robotics, industrial biotechnology, new materials, energy storage systems, minerals development, bullet train manufacture and advanced agriculture.

The exciting initiatives now introduced by the HEC after three years of stagnation include the magnification of research programmes to support bright young faculty, a huge Rs13 billion knowledge economy task force project to send our brightest students for doctoral level training abroad, introduction of blended education in universities so that excellent online courses are integrated into the teaching programmes and encouraging university-industry linkages so that focus can shift from basic research to industrial and agricultural research.

Thanks to Prime Minister Imran Khan, a silent revolution is underway. The declaration of a National Education Emergency is now under active consideration so that Pakistan can tap into its real wealth – the 67 percent of its young population below the age of 30.

The writer is chairman PM National Task Force on Science and Technology, former minister, and former founding chairman of the HEC.

Email: ibne\_sina@hotmail.com