**Winds of change**

Atta-ur-Rahman

Wednesday, Sep 29, 2021

Education as a whole and higher education in particular play a critically important role in the development of any nation. In Pakistan, foundations of a strong knowledge-based economy were laid in the first decade of the existence of the higher education sector, but the process was halted by previous governments due to a lack of funding.

We have, unfortunately, failed to realise that we cannot emerge from a series of repeated economic crises unless we invest in high technology and produce high value-added exports. There are myriad opportunities in areas such as information technology, industrial biotechnology, new materials, engineering goods, defence products and minerals, to name a few.

To make the most of these opportunities, we need to establish centres of excellence and strengthen their links with industries. Simultaneously, we need to provide liberal access to venture capital funds in order to promote new start-up companies. Our emphasis must be on the quality of education. High quality education depends on a number of factors: the first is high quality faculty. Remarkable steps were made when some 11,000 students were sent abroad to the world’s leading universities during the first decade of the Higher Education Commission (HEC) (2003-2012).

Students selected for PhD programmes had to go through three rigorous screening tests including final interviews by foreign professors. For instance, if there was a large group that was supposed to go to Germany, around six German academics would come to Pakistan and visit various cities to interview students and select the best candidates. The results of the process were phenomenal with our finest young men and women travelling abroad for doctoral training.

They would then return to Pakistan, attracted by a combination of incentives that included excellent salaries through the tenure track system, liberal research grants, access to sophisticated instrumentation, availability of a digital library and other such measures. This led to a surge in the number of talented young faculty in our universities and in high quality research.

The considerable increase in research output is reflected from the glittering reality that Pakistan, which was 400 percent behind India in 2000 with only 44 international publications per 10 million people as compared to India’s 172 publications per 10 million people, overtook India in per capita research output in 2018. The quality of indigenous PhD programmes was improved through the introduction of course work, encouraging co-supervision with foreign professors, examination of theses by foreign international experts, and introduction of software for plagiarism check that put an end to academic plagiarism. Pakistani students were encouraged to spend between six and 12 months at a foreign university in a developed country under a split PhD programme.

Other steps included the introduction of proper curricula and establishment of a robust quality assurance (QA) system within the HEC and in universities, introducing an external review system and a faculty evaluation system with six international reviews by foreign experts for all faculty members as they moved up from the assistant professor level to the associate professor and full professor levels under the newly introduced tenure track system.

Previously, the access to higher education of the relevant age group was only 2.6 percent. This was increased to about nine percent by 2008, and is 13 percent at present. The curricula were revised several times in consultation with industries. A digital library provided liberal access to books and journals. To encourage the university-industries linkage, multiple programmes were introduced which involved the joint funding of projects with industries contributing at least 20 percent of project costs. Technology parks were also established; the one at the National University of Science and Technology (Nust) is a prime example. Such measures led to the publication of many articles by neutral international experts who termed the decade as the “golden period of higher education” in Pakistan.

The programmes that I introduced as the founding Chairman HEC sent alarm bells ringing in power corridors in India. A detailed presentation was made by Prof CNR Rao, the then adviser to the Indian prime minister on science and technology, to the then Indian PM and his cabinet colleagues on July 22, 2006. India decided to follow Pakistan’s footsteps and replaced the University Grants Commission with the Higher Education Commission of India.

All these programmes were badly damaged in recent years, but a revival of higher education has now begun. The recurring budget of higher education was frozen at about Rs65 billion for the last four years due to poor HEC advocacy. Now, on my plea to the prime minister, it has been increased by an additional Rs15 billion, which will provide a much-desired relief to our universities. The foreign scholarship programme which was idle for the last three years with tens of billions of rupees lying unutilised in the HEC is also being revived. The tenure track system, which had decayed over the years in terms of salaries to faculty, has also been reinvigorated.

The prime minister has kindly accepted my proposal that a 35 percent increase in salary structures should be given across the board while a 100 percent salary increase should be given to the best performing tenure track faculty. Prime Minister Imran Khan’s government seems determined to transition Pakistan to a strong knowledge-based economy which is reflected from the fact that about Rs100 billion worth of projects in artificial intelligence, genomics, industrial biotechnology, mineral resources, advanced agriculture, energy, and other fields submitted by the Knowledge Economy Task Force either have been approved or are at various stages of approval.

A shining example of the recent progress made under my stewardship is the Pak Austria Fachhochschule. This university of applied science and engineering has started its operations in Haripur, Hazara in collaboration with eight foreign universities, three from Austria and five from China. Projects of two other such foreign engineering universities submitted by me have also been approved. One of these located in the lands behind the PM House in Islamabad will cost about Rs23.5 billion while the other in Samrial, near Sialkot, will cost about Rs17 billion.

Winds of change are blowing and will take Pakistan to new heights, driven by quality programmes in higher education, science and technology and commercialisation of high technology products.

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