

Financial Express Oct 21, 2019 Page No 12

Learning from China

Creating institutions that foster research, innovation

RL RAINA

INDIA HAS THE third-largest higher education system after the US and China, with as many as 993 universities and 51,649 higher educational institutions. However, the quality of our graduates, their industry-readiness, research output and spirit of innovation leaves much to be desired. China, on the other hand, has made great strides in creating world-class higher educational institutions that attract not just local but foreign students as well. As we work to create an educational system that is ready to meet the evolving needs of our growing economy, India would do well to take a leaf or two out of the Chinese book.

In line with its ambition to become a global powerhouse, China took a conscious leap in the 1990s into the direction of transforming its higher educational structure. Since then, China has allocated an ever-increasing percentage of its budget to education, with this touching 4.26% of the GDP in 2015. From 1,022 in 2001, universities in China grew to 2,631 in 2017, an increase of around 40% in one decade. With a quest to transform the country into 'an innovative society' by 2020, China intends to have at least 40 world-class universities by the middle of the 21st century.

Also, as a matter of policy, China considers universities as potent grounds for research, innovation and creation of codified knowledge in the form of patents, publications and prototypes, apart from centres for creating innovative human capital for a knowledge-based future. A recent study by the World Intellectual Property Organisation (WIPO) reported that China-based universities had taken a lead in AI-based inventions proving their mettle in top research and innovation institutions in fields hitherto dominated by the US and Japan. China also published more than 426,000 studies in 2016, surpassing the US in the volume of research publications for the first time.

While India has also witnessed an improvement in its research output over the past decade, we need to improve quality of output of original research as well as scientific innovations at university level. Barring the IITs, output of technological innovations by engineering or sciences students remains abysmally low.

India's investment in research is a meagre 0.62% of the GDP. In contrast, the US spends 2.74% and China spends 2.11% of the GDP on research. In 2015, there were just 216 researchers per million in India, while the same was 4,300 per million in the US and 1,200 researchers per million in China. Increasing expenditure on research, especially for scientific research in higher education, must be top priority of the government. For a country that manages to spend over 2% of its GDP on defence, increasing spending on education and research is not a matter of shortage of resources but of misplaced priority.

In addition, we need to promote undergraduate research, create new methods of pedagogy, and improve the scale of public-private partnerships. All these steps will help educational institutions produce more industry-ready graduates.

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