India: Too Many IITs, Unrealistic Expectations

Philip G. Altbach and Eldho Mathews

Abstract
The Indian Institutes of Technology (IITs), now 23 in number, are the "jewels in the crown" of Indian higher education in terms of quality, international recognition, and producing top graduates. But, in the past several decades, they have overexpanded, and some of them no longer offer top quality education. This article discusses the current condition of IITs and argues that their number should be reduced.

Without question, the Indian Institutes of Technology, or IITs, are the crown jewels of Indian higher education. They are world-renowned for the quality of their graduates, for their academic programs in a range of fields in technology and engineering—and in the past decade, for their research and innovation through research parks as well. They are among the few Indian higher education institutions that do reasonably well in global rankings. However, for the past decade or so, and according to current plans, the IIT "system" has expanded beyond its capacity to maintain its high standards and is in danger of sinking into mediocrity. The recent decision of the University Grants Commission to permit select IITs under the "Institutions of Eminence" category to set up campuses abroad could further weaken these already stretched institutions. It is time to rethink the changing role and mandate of IITs in order to ensure that quality and focus are maintained—and the needs of India prioritized, with a twenty-first century twist.

What the IITs Are, And Are Not

The original five IITs were established in the 1950s and early 1960s. Four had a foreign collaborator: IIT Bombay (Soviet Union), IIT Madras (Germany), IIT Kanpur (United States), and IIT Delhi (United Kingdom). Currently, there are 23 IITs. After setting up IIT Delhi in 1961, it took another 34 years to establish the sixth IIT in Guwahati in 1994. Since then, 17 more IITs have been established, including several that resulted from upgrading existing institutions.

Funded generously by the central government, IITs focused exclusively on technology and engineering. They later added the humanities and social sciences—but these programs were modest until the 2020 National Education Policy emphasized that IITs should focus more on "holistic and multidisciplinary education."

The IITs are small institutions, with average student enrollments of around 10,000 in the five older IITs. Some of the newer ones remain quite small, with fewer than 400 students. The older IITs have around 1,000 faculty members, while some of the new ones, such as those in Palakkad and Jammu, employ about 100. Most suffer from a severe shortage of professors. For example, IIT Dhanbad is approved to hire 781 instructors, but, as of January 2021, only 301 positions had been filled.

Offerings, Students, and Faculty

IITs are not universities; they have neither the range of disciplines nor the size that characterize universities worldwide. They started as undergraduate institutions; they gradually added small postgraduate programs, but some are now adding significant postgraduate offerings. IIT–Bombay's student enrollment, for example, was 58 percent postgraduate during 2019–2020. IITs were, and are, self-conscious elite institutions aiming at the highest international academic standards, a tradition that, in our view, is important but increasingly difficult to maintain.

It is not surprising that IIT graduates are so successful: The schools may be the most selective institutions in the world. Around 700,000 students sit for the national engineering entrance examination for the IITs and several other elite institutions each year and a vast majority of them target the 16,000-plus seats available in the 23 IITs. According to information from the minister of human resource development, in February 2020, dropout rates at the IITs were infinitesimal and declining, from 2.25 percent in 2015–2016 to 0.68 percent in 2019–2020.

Similarly, IITs have traditionally attracted high quality faculty. Most have doctorates from the most respected Western universities. Top quality professors have been attracted

It is not surprising that IIT graduates are so successful: The schools may be the most selective institutions in the world.

41

to the IITs because of the quality of the students, the chance to work with the best academic minds in India, and a commitment to India's development. While salaries do not compare well on the international market, working and living conditions on the older IIT campuses are comfortable.

In recent years, however, things have begun to change. IITs have not been able to attract a sufficient number of young faculty to fill vacancies resulting from retirements. The emerging IT and related industries in India are offering much more attractive salaries and exciting work opportunities, and many have also been lured to universities and industries in other countries.

At the same time, the government dramatically expanded the number of IITs, spreading them around the country. Most of the new IITs are located in smaller towns such as Mandi (Himachal Pradesh), Palakkad (Kerala), Dharwad (Karnataka), and others. While it is important to provide educational opportunities outside the major metropolitan areas, top institutions are seldom located far away from urban amenities. There are no doubt a sufficient number of excellent students to attend all IITs, but there are not now, nor will there be in the future, enough top-quality faculty to staff all of the new institutes, especially those in mofussil locations. Facilities and infrastructure are unlikely to be world class. It is, thus, inevitable that quality will decline and that the IIT brand will be diluted. This would be very unfortunate for India, since IITs are, without doubt, India's most recognizable and respected academic institutions.

Another area of concern is the lack of correlation between local needs and IITs. Most of the IITs and other prominent "Institutes of National Importance" are "academic enclaves" with little connection with their regions. Only a few state governments are effectively utilizing the presence of IITs in the local environment through knowledge-sharing networks involving universities, colleges and schools, and local industries and firms. Similarly, there are few community outreach programs. Such an approach could prevent disruption, such as that occurring in Goa, where local groups are resisting locating a new IIT in their region.

What Needs to Be Done

While excellent engineering/STEM (science, technology, engineering, and mathematics) institutions are needed, all do not have to be IITs. Perhaps 10 to 12 "real" IITs located near major cities are practical for India. Some of the newly established institutes can be renamed and provided with sufficient resources to produce high-quality graduates and good research. A more limited IIT system needs to be funded at world-class levels and staffed by world-class faculty, perhaps with some recruited from top universities internationally. A recent decision to liberalize recruitment rules to attract more foreign faculty is a step in the right direction.

Further, IITs need to pay attention to internationalization beyond sending their brightest graduates abroad and recruiting Indians with foreign PhDs. Starting overseas branches is a bad idea, but in-depth collaboration with the best global universities and hiring foreign faculty, perhaps as visiting scholars, would yield excellent results and further build their international brand. IIT Bombay–Monash Research Academy and University of Queensland–IIT Delhi Academy of Research (UQIDAR) are promising examples. IITs need robust policies to attract international students. And, of course, adequate and sustained funding is mandatory—both from government and from the philanthropy of tremendously successful IIT graduates at home and abroad. It would be tragic for India's "jewel in the academic crown" to be diminished. And overexpansion will inevitably mean exactly that. ◢

Philip G. Altbach is research professor and distinguished fellow, Center for International Higher Education, Boston College, US. Email: altbach@bc.edu.

Eldho Mathews is a higher education researcher based in New Delhi, India. Email: eldhomathews@gmail.com.