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Cementing the right foundation

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One cannot blame an aspiring student, if he chooses to ignore bioscience industry as a viable career option in the longer run. At the moment when everything in an education market is driven by job opportunities, the sector certainly lacks appeal. Even now, owing to the limited opportunities, a good career in biotechnology in India means that one has to either go for higher research (doctoral, postdoctoral research) or wait for a long time to get a good position in the industry.

A few bright students from top universities, who chose to join the industry, on the other hand, are stuck with a comparatively small package, stagnant job, and absence of innovative research, at their level.

Experts point out that there is a danger that 70 percent of these students will become redundant and down the lane most of them will be of no use. Going by that, we may end up having a huge base of students who will curse us for having nothing to do. The industry generally feels that academia is not creating industry- oriented professionals. They might be even right but the universities generally don't expect their students to work directly in the industry after their post graduation courses.

Finishing school adds value

So what is the solution? First of all, the creation of the right talent pool in this industry is very important. There are certain issues that need to be addressed at the base of this problem. One is the curriculum that is offered in the educational institutes and the other being the necessary infrastructure needed to carry out the research.

The right training and exposure is also important for the creation of the enriched talent pool required for developing the industry. For that there is a need for the government to evolve a clear cut strategy on employment. "If you want to hire million people by 2020, you need to educate millions today. I am told that Department of Biotechnology (DBT) is running 140 programs in 70 universities in areas such as nutrition, environment, marine biotechnology, bioentrepreneurship, and bioinstrumentation," mentioned the union minister of human resources and development (HRD), Mr Shashi Tharoor at the tenth anniversary celebrations of the Association of Biotechnology Led Enterprises (ABLE), held in March, 2013.

The minister urged industry captains to work with government in devising the right curriculum. "If information technology can make us proud then why not biotechnology. All we have to do is to give the right kind of attention and nurture it. There is a plenty of room from entrepreneurs to grow in this space and what is required for them are the due facilities," added Mr Tharoor. Often there are voices within the industry that these graduates are not employable.

There is a need to create finishing schools as a part of existing research institutes. Persons trained in one particular area need to be put into these schools for added skills. So far the star college scheme of DBT for giving aid to small colleges in remote areas has shown very good results.

The PPP model of finishing schools adopted by the Institute for

BioInformatics and Applied Biotechnology (IBAB) has been hailed as most effective one. We have had very good examples in the Karnataka model of BT finishing schools that can be followed elsewhere as well. Twelve biotechnology finishing schools under various institutions in eight districts of Karnataka were chosen on the basis of available infrastructure and faculty and collaborations with industry.

These include Visvesvaraya College of Applied Sciences, Gulbarga, Manipal University, Manipal, St Aloysius College, Mangalore, JSS University, Mysore, Oxford College of Science, Bangalore, Maharani Lakshmi Ammani College for Women, Bangalore, Padmashree Institute of Management, Bangalore, PES Institute of Technology, Bangalore, Siddaganga Institute of Technology, Tumkur, Probiosis, Bangalore, MM Arts & Science College, Sirsi, and Dayanandsagar Institution, Bangalore.

Thanks to the advances in computer science as well as networking and communication, the workforce today is becoming increasingly global and virtual. This modern day connectivity offers tremendous opportunities for collaboration, innovation and productivity enhancement. In the current scenario, the concerned stakeholders too have realized about the strong need for metrics in education. One analyst points out that only focusing on programs might not help. "There is no dearth or shortage of courses and programs but we need to introspect on the quality of graduates we are creating," he said.

More student entrepreneurs

The Indian biotech industry has numerous examples of risk takers but they too agree that it was like going against a storm and not just a simple tide. Lack of conducive environment had been too much and too far.

The positive aspect of the story is that now things have started moving in the right direction. There have been instances where the public institutes have helped in incubation of upcoming companies. LeadInvent and NovoInformatics, for example, were

incubated at Indian Institute of Technology (IIT), Delhi. The founders of both these firms have made good progress in a short span of time.

It is important that the ideas don't get lost due to lack of opportunities and money. To prevent that, even now in one such example, the Biotechnology Industry Assistance Council (BIRAC)'s strategy to support the numerous exciting ideas with unmet need for funding and mentorship is fulfilled through a grant funding scheme called Biotechnology Ignition Grant (BIG). Funding worth Rs 50 lakh is available to scientist entrepreneurs from research institutes, academia, and start ups. The scheme is designed to stimulate commercialization of research discoveries by providing very early stage grants to help bridge the gap between discovery and invention.

The private universities on their part have been much eager to interact with the industry and promote entrepreneurship. The same was visible at the BioSpectrum Student Lecture Series events held over past few years, across major Indian cities. For instance, the students at Jaypee University of Information and Technology, Solan were seen asking more about opportunities in entrepreneurial space. It is the time that the business aspects of the biotech are not overlooked. Otherwise the whole industry is set to lose in the long run.

There are two solutions that can be offered to students who choose the stream. Those having a flair for corporate world should be given an opportunity in this industry and at the same time the research oriented students should get ample support to help them in their pursuits. In this regard, the segregation seems to be one of the keys. India too can thrive in this science and knowledge intensive industry by leveraging its key strengths and by building a strong foundation for its young scientists and
professionals.