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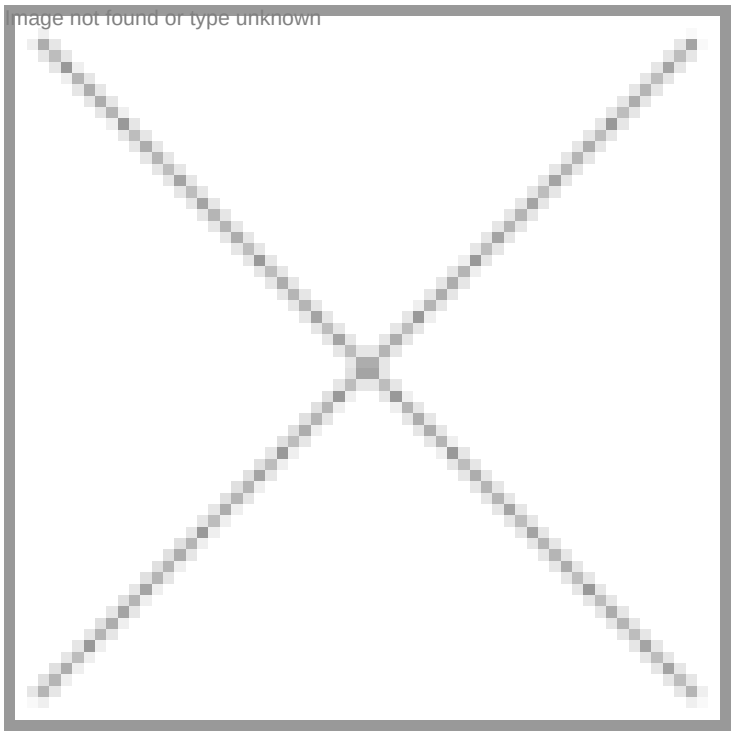

Finishing schools in the Indian biotech industry

There is a definite need to bridge this gap between the academia output and the required industry input. Since the current educational system has been unable to address this issue, a new concept of finishing schools has come into the picture. The single objective is to make the students employable. Students from IIM Banglore under the guidance of Dr Vaidyanatha Ayyar R V, former secretary, Government of India and visiting professor, IIM Bangalore, studied the finishing school models and have provide an actionable agenda for development of adequate quality human resources with the appropriate skills through these finishing schools. Excerpts of the findings.

The recommendations provided have been evolved keeping in mind the major responsibilities of a finishing school and the role of the main stakeholders in the Biotechnology sector â€“ the government, educational institutions and the industry, Also, it is to be kept in mind that the recommendations should be applied keeping in mind that the students need an employability oriented teaching in these finishing schools. Having studied the various models of finishing schools currently prevalent in India the authors have come to a conclusion that the PPP model of finishing schools adopted by the Institute for BioInformatics and Applied Biotechnology is that of the most effective one. The recommendations are hence oriented towards the basic framework or blueprint of an ideal finishing school in the biotechnology industry and the role of the various stakeholders in enabling this.

Basic Framework

The authors have developed a basic framework/ blueprint for the successful establishment and running of an ideal finishing school in the Indian scenario.

The framework has been designed by the authors keeping in mind the basic need for existence of a finishing school i.e. to convert those students who are fresh out of the various academic institutions into those employable by the industry. The three stakeholder approach is the basis for this framework as all of them must coordinate in order to make this finishing school a success. The framework touches upon all aspects of a finishing school â€“ establishment, management, selection of students, program structure, faculty selection, a placement process and various miscellaneous activities. This involves considerable involvement from the government in terms of capital and infrastructure and also from the industry in term of frequent inputs. Thus it is essentially a Public Private Partnership (PPP) establishment. The details of the framework are discussed below.

Establishment

- Currently there are no government policies regarding establishment of finishing schools in partnership with private players.
- Setting up a finishing school that would operate on a larger scale would require enormous amounts of capital as the latest biotechnology equipment is very expensive and it can cost around Rs 70 lakh to Rs 1.5 crore to have a well endowed laboratory facility.
- Clearances from both the Department of Education as well as the Department of Human Resource Development need to be provided for setting up the institution.
- The government should ensure that there are no regulations binding the finishing school to any particular university. It needs to be given a deemed status in order to help it function free from the various government hassles.
- The entire establishment needs to be driven by the cooperation of both the industry as well as the government. The government needs to help procure land in areas which lie in close proximity to the industry. Usually such areas are quite expensive and hence this can be easily done only by the government. This can be done either through the setup of Biotech parks as in the case of Bangalore city or through SEZs where the industries can work closely with the finishing school.
- The government also needs to relax any laws regarding taxes in order to help the finishing school during the initial years. This would reduce the burden on the establishment which in turn can help reduce fee costs for the students.
- The government also needs to create various incentives to the industries to enable them to actively participate in this finishing school at various stages.
- The industries must realize that they are the ones to ultimately benefit from the entire setup and hence must seek out to cooperate with the government in working towards establishing this school

Management

The management of the finishing school should ideally lie in the hands of renowned academicians and industry players. This must be done to ensure a smooth functioning of the institution without government interventions. The academicians in the Board must comprise of dignitaries from various aspects of education like management education, technical education etc in order to help provide an integrated wholesome learning to the students. But in order to ensure that there is effective monitoring at least one senior government official must be a part of the Board of Directors.

Faculty

The faculty of the establishment needs to comprise of expert academicians who have considerable knowledge of latest technologies or people with very good industrial experience. This is because the entire course needs to be industry oriented with real time knowledge being imparted to the students.

- Salary support, research grants, lab facilities and opportunities to attend international conferences should be made available to the professors at the finishing schools. This must primarily be aided by the government as it requires enormous funds to do the same.
- The faculty must also be allowed to practice free lance consulting but on a revenue sharing basis for the institute. This freedom will not only encourage faculty to stay with the institution but also will generate extra revenues for the institutions.
- A facility must be created to have a system of visiting faculty from industries where people are unable to dedicate their entire time to the finishing school.
- Internationally renowned scientists and industry practitioners must be invited on a frequent basis to provide the students with a global perspective.
- A forum must be created for frequent industry-faculty interactions. This will enable the faculty to understand the latest developments in the industry and adopt suitable techniques to teach the students

Program Structure

Core course

The main objectives of the finishing school are to

- Provide a practical and hand on experience to the students
- Familiarize the students with the latest advancements and technologies in the industry
- Help the students specialize in a particular field
- Develop the students' secondary skills such as communication skills, problem solving ability etc.
- Hence the program structure or the course must be tailored in order to achieve the above objectives. Some of the ways in which this can be done are:
- A major part of the course must be dedicated to a practical learning
- Frequent visits to the industry either for demonstrations or for learning from the field must be made a mandatory part of the course.
- The course should contain a brief internship program where the student works with one particular industry and he/she may even receive stipend from the industry for doing so. The industries must actively participate in this process and they may need to be provided with suitable incentives by the government for doing so. This also provides a system whereby the student can be directly absorbed by the company and he/she can join them as a full time employee as soon as the course is over.

- One of the major complaints that the industry has with the current academia output is that their knowledge is too general and they are not specialized in any particular field of biotechnology. Hence the finishing school must offer various courses to the students in order to help him specialize in a particular field. E.g. BioInformatics, bioPharma, clinical research etc. Also, counseling services need to be given to the student to help him understand the various industry fields before he/she makes a choice of specializing in it. The curriculum should balance the need for general basic knowledge of biotechnology as well as specialized knowledge requirement

- The theory taught in the course must be relevant to the current developments in the biotechnology industry.

- Standard e-learning modules should be developed for specific skill areas such as IPR, regulations etc

- Course curriculum should be reviewed by a body consisting of members of the UGC, AICTE and DBT in consultation with industry and research establishments and receive suitable accreditation.

- The curriculum should also be updated (theory as well as practical) every two years with specific inputs from the industry on the kind of skills, practices and tools used.

Secondary courses

- Courses of shorter duration (typically 1-2 months) can be offered to students requiring extremely specific training. This will ensure that students who need to acquire only niche skills can also be served.

- Also people working in the industry who require up gradation of certain skill sets either to move higher up in their career or to move laterally to another department can be coached in this finishing school. This course can vary in duration from two to three weeks. Companies wanting to uplift the skill level of their employees can also sponsor such courses for them. Hence alternative revenue mechanisms are established to make the model sustainable.

- The government can fund for faculty from various academic institutions to attend smaller courses in order to gain knowledge about the latest advancement in the industry and also on how to handle the latest equipments.

Selection of students

Since the number of students graduating from the academic institutions are large in number and the seats in such a finishing school is limited at any point of time the selection of students need to be made through a careful industry driven entrance examination. The industry needs to provide inputs as to the basic skills sets it expects from a student to be coached by this finishing school. The entrance examination needs to be based on these inputs. The authors feel that an examination to test that student has basic knowledge in technical field comprising of basic and life science, has a minimum level of problem solving ability and communication skills is comprehensive enough to filter the students. Once the government is able to setup up such multiple finishing schools across the country, it can also make provision for infrastructure and funds required to conduct a common all India level entrance examination for such various finishing schools.

Placements

- The institution must have a strong tie-up with industries across the countries. This will enable the industries to provide internship opportunities to students from the finishing school and also absorb them into full time employment after graduation if they are found suitable.

- Also, like in the case of IBAB incubation centers can be setup to encourage the entrepreneurial nature of students.

Budding entrepreneurs form outside can also be encouraged to participate in the activities of the incubation center.

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