

**1. Title of the practice:** Creating an environment for undergraduate students to carry out research

## **2. Objectives of the Practice**

Objective 1: Expose UG students to the importance of research.

Outcome 1: Intelligent students will be attracted to the research and select research and development as a future carrier.

Objective 2: Involve UG students to collaborate with MS/Ph.D. students in solving research problems.

Outcome 2: UG students will be exposed to the practice of solving research problems and writing research papers. They will also be exposed to the development of research prototypes and the latest research trends.

Objective 3: Exposing the UG students to the latest research trends through expert talks and seminars.

Outcome 3: Every UG student will get the opportunity to attend talks in diverse domains and come to know about the corresponding latest research trends. As a result, he/she will be able to select an interesting research area for further exploration.

## **3. The Context**

The institute should have eminent research faculty who carry out cutting-edge research. Also, the students who are getting admitted should be intelligent. There should be a research environment with several MS and Ph.D. students in diverse disciplines. To implement the above practice, it is important that the management shows full commitment toward excellence. The commitment should be reflected in attracting eminent research faculty and visiting faculty. Also, the institute should have a robust research-oriented curriculum.

## **4. The Practice**

The number of research students in India is significantly less than in China and USA. In order to solve research problems, we need a human resources with research skills. As of now, several companies are operating their research labs in India. To get quality researchers, it is important that Indian universities should produce researchers with the required research skills. Also, to solve India's economic problems and increase high GDP, it is important that we develop indigenous technologies. We cannot expect foreign researchers to produce technologies to solve India's problems. So, it is very necessary to encourage the current and next generation towards research by developing institutes that encourage high-quality research. In summary, it can be said that "India's problems can only be solved by Indian researchers". The main question is how? At IIIT Hyderabad, we are striving to create a research environment to produce next-generation researchers. At first, we declared IIIT Hyderabad as a "Research University". As a result, anyone who joins this University, either faculty or

student, has no confusion regarding expectations. Also, we are making efforts to create a research culture through various mechanisms such as attracting intelligent students, encouraging collaborative culture, and providing avenues for getting exposure to the latest research trends through guest lectures/seminars.

Like any new idea, the proposed mechanism also has constraints. There are several constraints.

- Indian education environment during intermediate education: There is mushrooming of coaching classes for entrance exams has changed the mindset of students toward learning. They come to college with the mindset of coaching class: higher emphasis on grades than learning. As a result, it is becoming difficult for the institute to mould the students for carrying out research.
- Parents and peer pressure: The parents want their children to get a good job in the company. They do not understand the scope of research-based education and therefore influence the students towards high-paid jobs like other peers rather than spending a few years doing research with a scholarship that is significantly less than the salary.
- Faculty: Also, since independence, the faculty are not in the habit of doing cutting-edge research and are given importance to providing high-quality education. Mostly, individuals are earning Ph.D. taking faculty jobs as a settlement, and doing research as a part-time activity. It is becoming difficult to get committed high-quality researchers as faculty members.

## **5. Evidence of Success**

Several UG students are collaborating with MS and Ph.D. students in writing research papers. Several students have joined research start-ups. 6 students joined MS/Ph.D. programs in top-graded universities abroad with fellowships and scholarships. The results indicate that students are liking the research environment at the institute. Also, due to high-quality research, advanced electives in selected areas are being offered which provided opportunities for UG students to get exposed to the latest research areas.

## **6. Problems Encountered and Resources Required**

This university has started itself by declaring itself as a research university and the management has set clear-cut goals for the institute. Initially, it took a few years to get top research faculty. After getting the threshold number of faculty members, things proceeded smoothly. The institute is self-managed, and there are issues with getting funds. Things are being managed with optimal management of resources. At the same time, the institute is striving to get more funds through research projects and donations.

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