Employability Enhancement Methods for Engineering Graduates

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Abstract

Currently while there is no dearth of opportunities in the employment scenario, there is a serious lack of employable talent. A modern-day research thru Merit Trac indicates that only 10% of all skills being churned out by manner of the academia nowadays are employable. It is essential here to distinguish between mere expertise and employable know-how. While there may be abundant know-how in India, the percentage of enterprise-ready applicants is alarmingly low, posing a huge assignment for the business enterprise in assembly its requirement. In reality higher educational institutions strive to develop state-of-the-art programmes at huge capital investments for infrastructural developments, employing highly qualified academicians, and introducing innovative methods of teaching. Still the expectations of society on the employability of their graduates which they consider as the future are not fulfilled. As a result, there is an increase in awareness among the higher educational institutions to assess and suitably enhance their educational system to meet the needs of the society. As to facilitate the higher educational institutions, this paper proposes an operable approach to accommodate changes in educational curriculum and enhance academic standards to serve the society.

Keywords: higher education, employability, Skill development, Enhanced education

1. Introduction

In a multipronged approach, the Placement Cell focuses on improving English proficiency, Analytical

Employability of Engineering graduates and their ability to deliver to the industry expectations after they are hired has been a matter of concern, engaging the attention of academics and industry alike on this issue. The NASSCOM and McKinsey report indicates that only 25% of our engineering graduates are directly employable and the situation has changed significantly in the last five years. Experts in this line of thought opine that the students, though educated are seldom employable, as they lack skills in areas which are the most sought after by the industry.

A hole is maximum probably to be present between teachers and industry wishes .Industries regularly do no longer locate proper manpower, affecting adversely the employment state of affairs. The national employability document compiled by way of Aspiring Minds revealed that most effective 17.45 percent of technical graduates in the U.S are prepared to be hired.

In order to develop the skills of their students which the Industry demands from an entry level employee, some of the Institutions have organized the vast number of training on employability in our campus to improve our student's placement. These kinds of skills will help them connect with industry before they step into employment. Providing such training would have twin benefits - firstly, the students will be well-prepared to enter the job market, which will positively impact their productivity at the work place and secondly, companies will be spared of the huge amounts of investments required on pre-employment training, especially in areas like soft skills.

and Logical skills, Personality development and software knowledge of Industry requirement.

2. Objectives

The main objectives to enhance the employability in our institution are listed below.

- To provide students an understanding of the expectations of industry.
- To improve employability skills of engineering students.
- To bridge the skill gaps and make students industry ready.
- To provide an opportunity for the students to develop inter-disciplinary skills.

3. Description of the Best Practice

3.1 Strategy Implementation

The government has designated the development of students' employability as a policy objective for the higher education sector. Employability as one of the priorities for institutional learning and teaching strategies, and its Higher Education

The 21st-century engineer ought to have the capacity to:

- **Understand** the Physical constructs and Contextual base of the economic, industrial, social, political, and Worldwide dimensions within which engineering is practiced;
- **Design**, so as to meet protection, reliability, environmental, value, operational and upkeep goals;
- **Realize**, products;
- **Create,** perform and preserve complex structures;
- **Participate** within the system of studies and
- **Gain the intellectual abilities** wished for lifelong getting to know.

Our institution identifies and implements the following as the best practices to improve the employability of the students.

- Value Added Programs
- Summer Training/In Plant Training
- Placement Training
- Technical Workshop
- Career Guidance
- Entrepreneurship Development

a. Value Added Programs:

This program aim to provide the addition learner centric skill oriented technical training with the primary objective of improving the employability skills of students. The strategy adopted tries to bridge the perceived technical competency gaps of students by providing training in employability enhancing technical subjects through mandatory non credit courses of 36 hours duration for four semesters, as part of the curriculum. In addition to this, other value added education courses that will further improve the employability prospects of the students are offered outside regular contact hour on optional basis. The various centers of excellence and training centers should be established in collaboration with industry leaders. The academic experts with doctorate qualified may permanently recruit and used to provide value added course for the students.

b. Summer Training/In Plant Training:

The students undertake industrial training in summer and winter vacations. The college organizes most of the training sessions with companies that it is tied-up with. On occasions, the department or the placement and training cell recommends students to specific industries. At times, the students also take up training through their personal references and contacts.

c. Placement Training

As part of determination to offer its college students the very pleasant in existence, a complete- fledged placement centre capabilities in the campus with the assistance of an experienced college in each discipline. The very lively placement centre serves as a basis for many careers by using guiding college students in right route thru continuous counseling and arranging for campus recruitments .This centre creates a meticulous database and assists the scholars in getting placed in national & multinational organizations through campus recruitment. Till date, several loads of college students were positioned in worthwhile jobs thru campus placement centers.

The education department of the university works in near association with the location and value introduced training divisions. The division gives help to the students in obtaining skills required for immediate employment. The schooling division goals at developing with ease employable graduates with the considered necessary technical and soft abilities. The industry/research requirements are identified and the students are given education by way of experts from each within the group and from outdoor primarily based on an in depth schooling calendar

each 12 months. The inner education is obtainable with the aid of faculty and peers, while the external education is obtainable by means of professionals in the discipline from academia/industry/research establishments/experts and so on. The institute has MoUs with several majors within the subject of human resource improvement and schooling, via which structured programmes are brought to the scholars in the pre-final 12 months. The education to students are supplied at 3 stages; at some point of the second one semester of study focusing on conversation capabilities, at some stage in the second year specializing in character development and in the 12 months specializing in gentle abilities. Parallel education is to be had on the cafeteria mode on diverse technical components over and above the normal curriculum for all of the branches of examine rightly known as price delivered education.

d. Technical Workshop

To fulfill the industry standard of technical knowledge, the technical workshop on emerging technologies should be organized periodically for the students. This will help the students to improve the technical skills. Because of this, the confidence level to face the interview will be increased.

e. Career Guidance

The Career Guidance Cell has been catering to the desires of students with the following objectives needs of students with the following objectives:

- To conduct a survey amongst students on their career alternatives.
- To arrange programmes to create consciousness approximately the significance of better research in India and Abroad.
- To prepare training on CAT, TOEFL,GRE etc. Toward higher research.
- To organize coaching classes on CAT, TOEFL,GRE etc. towards higher studies.
- To conduct Orientation Programmes for freshers.
- To organize and offer various programmes on Personality Development, Soft Skills and Communication Skills.
- To organize Pre Placement Training Programmes to enable students to showcase their skills during the Interview.

f. Entrepreneurship Development Cell

Entrepreneurship Development Cell should be set-up in the campus to promote and educate young students to establish their own ventures by taking the benefit of the policies of the government. The cell may organize different activities and events to create entrepreneurial thinking among the students.

3.2 Embedded Educational Framework

The engineering Students need to be fully aware of the professional skills requires by the job they are applying for and with engineering, they need to have updated skills required in the industry. The employability rate of engineers is valued at a much lower rate than the annual graduates who are ready to enter the labor market. The first thing that is realized in this concept is that it is not just about talent in the profession but much more about the basic skills and requirement for employment approval.
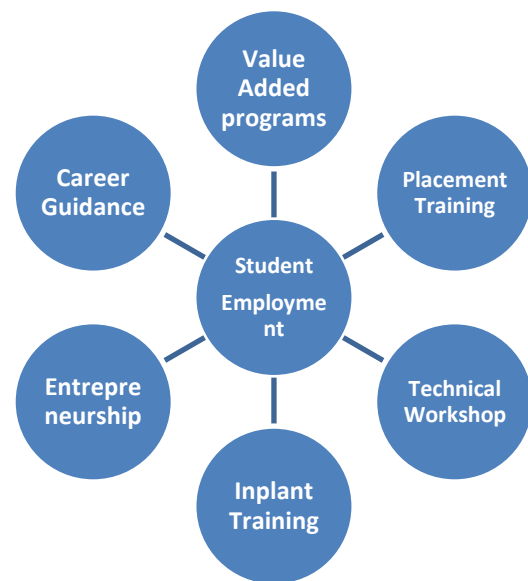

Figure 1.Conceptual Framework of Enhancing Student Employability

The above figure 1. describes the framework which adopted for student employment in various engineering colleges. The three main goals of this framework are to gain:

- Academic knowledge
- Intellectual practical skills
- Professional skills.

In order to do this, the education system of engineering needs to be continually updated with the new findings in the industry. Engineering is constantly developing and the new knowledge needs to be passed on to the students through their curriculum. The students need to gain practical intellectual skills which are better gained in a viable company. The education system needs to attach employment of student to various companies while they study. This should be done as soon as the students begin their first semester. This will enhance their fieldwork experience as well enhance their understanding of the study material. An assessment conducted on the work they have been conducting during the semester should be assessed in order to analyze their progress and this should be done by both their tutors and their supervisors at the workplace.

a. Resources Utilized

Most of the academic institution has constantly developed state of the art laboratories and facilities to promote research oriented activities. Every department has its own labs and facilities to help students to do projects. Mechanical Engineering is equipped with well established labs and workshops. The CAD/CAM center features the state of the art networked computers supported by software's like ProE, Lab VIEW, CATIA, Auto Cad, ADAMS, Master CAM etc. In addition the department has CNC lathes and milling machines supported by CAM packages. The college has also established state of the art laboratories with advanced software's in all engineering disciplines like Bio Medical Engineering, Electrical and Electronics Engineering, Electronics and Communication Engineering, Computer Science Engineering, Information Technology, Electronics and Instrumentation Engineering, Power Electronics Engineering, VLSI Design Engineering and Nano Technology.

b. Computing Facilities

The department has a separate computer center with latest computing facilities (PCs). The computer center has Local Area Network (LAN) system and internet facility. The students are allowed to use internet facility to achieve academic Excellency and to keep abreast with state of the CAD/CAM Technology.

4. Results

The program has been highly successful in placing 90% the candidates in their dream companies with their dream profiles. Candidates were asked to indicate their preference of companies before the commencement of the Scheduled Interview Event and a high number of them were placed in the company of their choice. 69% of candidates who received offers did not have jobs earlier. This also indicates that a lot of talent has gone unnoticed in the past due the constraints on the companies who have not visited these campuses.

5. Innovation

From the inception, the institute has been concentrating on both theory and practice of engineering for the students to become a complete engineer. The management has tremendous faith that the application of theoretical engineering knowledge to solve industrial problems and innovate new concepts and products are very important for the students to be very successful engineers. With all these facilities and with highly qualified and dedicated faculty members make it possible for the institute to produce award winning projects by its students. The management also believes that good placement of the student only will satisfy the expectations of the students, parents and society from an engineering institution.

6. Constraints and impact of the Best practice

The major impacts of employability enhancement are listed below.

Emotional skills: A character's capability to manage their feelings and persevere whilst setbacks arise.
Emotional capabilities: An individual's ability to manage their emotions and persevere when setbacks occur.

Attitudes: An individual's outlook and approach to mastering and paintings. This includes their fashionable emotions approximately taking part in work and their aspirations

Employability abilities: The attributes required to prevail within the place of business, and work with others. These include communiqué, teamwork and leadership abilities.

Career management abilities: The knowledge and abilities required to discover a task. This includes having career path, knowledge a way to look for jobs, and presentation to employers.
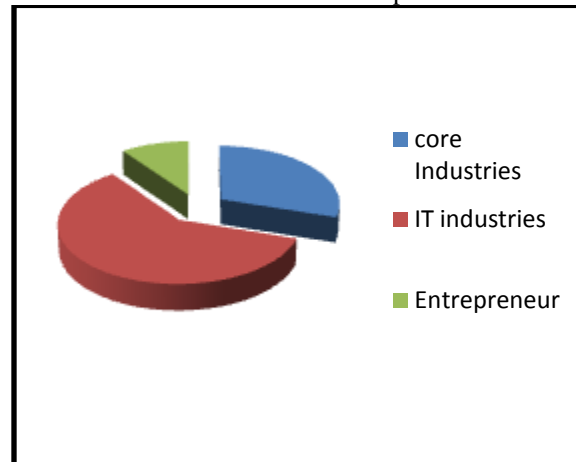

Figure 2. Percentile Ratio of Student placement

High level of Placement Count: Around 60% of the students were placed in Tier-I IT industries and 30% of students were placed in core Industries. The figure 2 shows about the percentage ratio of student's placement in various sectors.

Entrepreneurship skill: 10% of the students have started the own business.

Constraints: The major constraints identified while implementing the employability enhancement are, more number of students Participation are required.

Shortage of working days to organize the various industry oriented programs in addition to the Anna University syllabus.

7. Conclusion

Talent is wide-spread and not just restricted only to Tier I Colleges

- Exposure to industry expectations is very important
- Feedback mechanism is critical to identify and focus on gaps in skill sets
- Create Success Stories in Tier II colleges and smaller towns. Talent pool there is very critical to meet the demands of the industry in terms of numbers.
- Colleges and Universities will need to allocate sufficient resources for post-assessment training to help students improve their employability

- Training on industry readiness needs to be customized at individual student/group level, rather than the current "one size fits all" approach

This paper addressed the changing educational scenario and suggested five operable approaches for universities and higher educational institutions to enhance employment opportunities. The outlook of the authors is that the day students get their degree certificates; they should be able to get their employment orders also. Such a situation will be one of the measures of evaluating the standard of universities and higher educational institutions in the near future.

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