Innovative Techniques for Engineering Students in India

Prof. (Dr.) K.L.Bhardwaj
Department of Humanities&Social Sciences
Institute of Engineering&Technology
MIA, Alwar (Rajasthan)
Email:bhardwajk00@gmail.com

ABSTRACT

In present scenario industrial technology is changing very fast, the present education system of engineering students to be responsive and according to industrial technology. As the population of students entering into engineering education sector is alarming in India, so there is a need for engineering educators and planners of the current century to be conversant with existing practices and requirements of the industry to bring in innovation and improvements in engineering education system. The feedback assessment model at different levels can help in planning and innovating the methodology in the current engineering education development perspective. At one time, there were only a handful of engineering institutes but now the number of institutes set up for various disciplines year on year indicates an engineering education boom in India. Engineering colleges in the country have been growing at 20 per cent a year. Further the quality of engineering education is also getting a boost. The paradox is that, despite the increase in the number of colleges, the competition for acquiring fresh talent every year is so heated that it gives an impression that resources are really scarce. In reality, there is a plethora of career options for engineers of current years. The challenge is not the supply of talent but that of talent that meets the needs of the corporate world. The results indicate that if the students augment their skills in a few specific areas desired by the industry, employability in the country can be significantly enhanced.

Key Words Innovative- Imaginative**,** Conversant- Confluent, Boost- Abetment, Perspective- Outlook, Scarce- Insufficient, Plethora- Abundance, Paradox- Absurdity, Augment- Acumen, Enhanced- Endurance.

Introduction

Engineering is a profession directed towards the skilled application of a distinctive body of knowledge and understanding based on mathematics, science and technology,

Integrated with business and management, which is acquired through education and professional formation in a particular engineering discipline. The engineer must be able to exercise original thought, have good professional judgment and be able to take responsibility for the direction of important tasks. It is necessary therefore that undergraduate programmes for engineering students at honours level foster and inculcate the knowledge and understanding, abilities, and qualities of mind.

Tips for Career Aspiring Engineering Students

1. Identify the people who inspire you, and find out what makes them tick. If you love Apple products, Steve Jobs may be your idol, or perhaps you love the Segway and its creator, Dean Kamen. You can easily find out a lot of information about Jobs and Kamen—or just about any other prominent person in technology—so use it to look into what's helped these people and their companies become so successful. Then emulate their good traits in your personal, scholastic, and professional life.

2. Develop a portfolio of projects. Participate in every hands-on, experiential learning opportunity that a balanced schedule allows. This way, you'll have something unique to show a prospective employer (or venture capitalist) when you graduate, while other students will only be able to list their courses. In addition, you'll be far more likely to retain the knowledge you've gained in classes because you'll be applying it and, in the process, boosting your communication and interpersonal skills.

3. Learn the value of networking. When it comes to being a leader, whom you know is almost as important as what you know. Attend lectures on your campus and introduce yourself to the speakers. Check with your school's alumni association to get a list of alumni from your program who wants to connect with undergraduates.

4-Star Tip. In addition to E-mail, you can use Linked In or other social media tools to connect online. But remember: There's no substitute for a traditional, face-to-face meeting, so if you can find a way to meet in person, that's always the best.

4. Work in teams as much as you can. Whether it's creating a solar-powered car, participating in a sport, or writing for the school paper, get involved with an organization that requires a team effort to produce great results. Throughout your career, you can be sure you'll work in teams, and the skills you develop in school will help prepare you to lead teams when you graduate.

5. Seek informal leadership roles. You're always a leader, whether you're officially in charge of a team or not. Sounds counterintuitive, but you can lead from any position in an organization by influencing how people work together and how they make decisions. Usually people think that the leader is the president or the manager, but if you learn how to recognize and deal with various leadership styles from any position in a team, you'll be seen as a leader when you take on your first job or internship.

6. Find your flaws—and fix them. As with any skill, leadership needs constant improvement. When you are part of a team, try to create a way to get feedback from team members, group leaders, and professors. When you have concrete feedback on how people view you, you can work to improve your skills, including communication and leadership. Plus, you'll learn how to accept—and give—constructive criticism. That's absolutely necessary for your future career.

7. Take a business class. As an engineer, it's not enough for you to be technically proficient; you need to have business savvy. If you're going to be a leader, you need to understand what a P&L is (also known as an income statement), read organization charts, know how to negotiate contracts, and be familiar with the myriad other functions that every top engineer needs to know. Otherwise, you won't understand what to do when an accountant, lawyer, or middle manager gets in the way. A business course or two can take you a long way, and these classes are often easier to pass than your calculus course!

8. Take design and other humanities classes. There's a wide world out there beyond problem sets, laboratories, and theory. Take a visual design course so you'll learn to represent ideas graphically. Take a cognitive science course to learn how people interpret the world and understand it. Take a literature course to develop your knowledge and appreciation of the classic books, which will help you write and communicate more effectively.

5-Star Tip. Tomorrow's leaders will have to communicate effectively across international borders and be familiar with other cultures, so develop some proficiency in another language, travel abroad, or meet students from other cultures. Start "globalizing" right at college.

9. Make your summers productive. Employers place tremendous value on practical experience. Seek out internship opportunities actively and early in your academic career. Try to demonstrate through your internships a series of evolving leadership experiences, and use the internships to build your portfolio of actual projects/products. New graduates who can show a commitment to using their summer to continue to learn are always viewed more seriously by a prospective employer.

10. Recruit and develop your personal board of directors. As an undergraduate, you might feel alone when confronted with hard decisions about the courses to take, jobs to apply for, or even balancing school work and your personal life. You won't feel alone if you develop a personal board of directors just for you. Just as a company has a board that guides the organization, you can stock your board with professionals from organizations and companies, as well as former teachers and knowledgeable family friends.

Extra Pointer. Be sure to "nurture" your board of directors: Keep in touch with them, provide them regular updates, ask them for guidance, and be sure to thank them for any help they provide. And don't be afraid of conflicting advice. If members offer different suggestions, you'll have the occasion to balance off one idea against another and make your own decision—just like at a real company

Leveraging Technology through Unified Technology Learning Platform (UTLP)

One of the important gaps observed in engineering education is the students' lack of exposure to the latest technology, particularly in their practical work. This has led to the creation of the Unified Technology Learning Platform (UTLPs) which expose students of engineering colleges to the latest technology. UTLPs help the learner to imbibe higher forms of learning using a practice based approach. With UTLPs students are encouraged to conduct research in emerging areas and motivated to adopt a multidisciplinary learning approach to enhance their employability skills.

Innovative projects

Imagine moving a wheelchair with your eyes or commands. Or think of a situation when you can hire auto rickshaws via SMS. Or make your garden lush using technology. These are the innovative projects created by engineering students across the state. The projects were selected for further development after the first ever talent hunt jointly held by Startup Village, India's first telecom incubator, and the Kerala Chapter of the IEEE Communication Society (ComSoc) to identify innovative projects in communication technologies and applications by engineering students.

Conceived by five students of Sahrudaya College of Engineering Technology, Kodakara, **Thrissur**, the 'Intelligent Wheelchair' can be operated through eye movements, voice or a lever so that even the differently-abled can operate it. Sensors to detect hazards, SMS alerts to get connected to a patient, and a device to monitor physiological conditions and inform a doctor will be other smart features in this wheelchair.'Smartmotive', developed

By students of Government Engineering College, Thrissur, is a standing wheelchair that helps a paralysed person to stand up from a seated position. Since the movement is controlled by retinal movements or facial commands or sound, it can be operated by people suffering from any kind of paralysis.

Another interesting project is the '**SMS Vehicle Locating Solution**' by a team from College of Engineering, Thiruvananthapuram. Commuters can send SMS alerts to auto drivers pinpointing their location in plain text as well as an identifiable landmark location code to the designated number to avoid waiting. The proposed system is designed to function on basic feature phones that support SMS functionality.

STARK (Scientifically Trained Arm-Robotic Kinesis), proposed by a group of students of Mar Baselios College of Engineering and Technology, is a battery-powered, lightweight exoskeleton framework of an arm to provide support, or to enhance the physical capabilities of the wearer.

Project **Harita** (Hybrid Automated Remote Irrigation Technique for Agriculture), is a user-friendly automated solar-powered irrigation system for domestic gardens mooted by students of Sree Chitra Thirunal College of Engineering, Thiruvananthapuram.

Another project is '**Tarang**', which is a technique to convert mechanical effort of any kind to electrical energy. Developed by the students of SCMS School of Engineering and Technology, Karukutty, it is a compact device which allows users to convert any 'weird' mechanical energy source into electrical energy without any modification to the apparatus.

Conclusion

Technological literacy and access to information and communication technology (ICT) Resources are also important at the foundational level if India is to continue to capitalize On its strength in information technology–related industries. If adequate skills are not imparted at the foundational level, whether through the formal or informal educational systems, there will be fewer qualified workers in labor-intensive industries and a reduction in the availability of skilled workers for the innovation system as a whole. Moreover, low workforce education levels are significantly correlated to low firm productivity—increasing the average education level of a firm's workforce by one year is associated with a 13–16 percent increase in firm productivity.

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