Chapter 26

Enhancing Employability Skills of Engineering Graduates

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Abstract Engineering education demands numerous challenges in the present context due to the difficulties posed by the placement scenario. Demand for competent engineering professionals has made the selection process highly challenging giving rise to a need for comprehensive education pedagogy not just confined to inculcating hard core technical attributes but also human skills. Hence there is an urgent need to continuously upgrade the curriculum design of engineering courses so as to better equip the technical graduates with employability skills. BITS, Pilani, one of the premiere technical institutes in India has a well-designed pool of structured courses such as Business Communication, Technical communication, etc. which do incorporate modules such as Professional Presentations, Group Discussions, Interviews, etc. so as to hone the soft skills of the students. The paper attempts to deal with the experiential innovative methodology adopted in the course Business communication so as to enhance the employability skills of the Engineering students.

Keywords Engineering education • Employability skills • Soft skills

26.1 Introduction

The present job scenario demands the workforce to be competitive and well-groomed in all the areas related to hard core technical skills as well as soft skills. “Skills refer to the level of performance of an individual on a particular task or the capability to perform a job well which can be divided into technical elements and behavioral elements” (Noe et al. 2015). Soft skills are the skills, which complement hard skills such as interpersonal communication competence, ability to work in teams, motivation, leadership, etc. As per the recent data LinkedIn’s ‘2019 Global Talent Trends Report’ “as automation and AI continue to reshape entire industries, companies and

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jobs, strong soft skills—the one thing that machines can't replace—are becoming absolutely vital” (Saira 2019).

Hence, comprehensive education curriculum should be the focus of the Educational Institutes in the present scenario. There are organizations whose sole criteria for hiring the professionals is based more on skill sets relevant to a particular profession evaluating an individual on parameters such as attitude, leadership, motivation, team work, persuasive strategies to deal with people, communication skills, emotional intelligence, interpersonal skills, conflict management, etc. However, it is hard to quantify these traits in an individual but certainly adequate training should be provided to inculcate such attributes among the aspiring professionals. Despite the awareness of the expectations of the firms not many educational institutes offer structured courses in the desired area of people skills. There exists a gap between the expectations of the corporate sector and the modules designed by the academic sector. The growing trend of soft skills training sometimes fail in instilling an urgency among engineering students as they still consider completing the basic educational requirement as the benchmark. Büth et al. (2017) quote the AICTE, Placement, Graduates, Enrolments and Intake Statistics of Engineering Education in India.

“The All India Council for Technical Education (AICTE) statistics show that the enrolment of youth for technical courses in India is lower than the available capacity and less than 40% of the graduating students get jobs in industry. This clearly shows a mismatch between the industry requirements and academic skill development” (Büth 2017).

However, a few educational institutions include such courses as essential components in their academic structure and BITS Pilani being one of the leading educational institutions in India place a lot of importance to such courses. The course business communication taken up for analysis in this paper is a well-established course initiated in the year 2002 and since then it has been a highly popular course among the student community. The main objective of the paper is to share the teaching modules included in the course structure and the positive impact on the learning outcome of the students.

In BITS Pilani, several courses dealing with soft skills have been the essential part of the education curricula such as business communication, technical communication, etc. All these courses have all the desired soft skills components in their structure where students acquire significant training in all the people skills relevant to their job profile. Though all these courses have their specific objectives, this paper would confine its discussion to only Business communication.

26.2 Literature Review

Hard core skills are the skill sets relevant to a particular discipline but soft skills are a set of traits required for imparting a wholesome education to a professional wherein he is not only a computer engineer or a mechanical engineer but a technical graduate with a perfect hold on his dealings with the professional world and hence can be

a good leader, a motivator and a person having all the necessary attributes which enable him to deliver his best in the job scenario. As defined by Hargis, technical skills are also termed as hard skills, and are “job specific tasks directly necessary for successful completion of the job,” for example, electricity, robotics, and computer technology (Hargis 2011).

Various studies have been conducted which highlight the role of soft skills also known as Employability skills for a technical professional and Chaita explains employability skills as “thinking skills such as logical and analytical reasoning; problem solving; capacity to identify access and manage knowledge and information; personal attributes such as imagination; creativity and intellectual rigor; values such as ethical practice, persistence, integrity and tolerance, problem solving, team working, communication, leadership” (Chaita 2016).

On the other hand, another scholar Dorsey compares employability skills with medicine which one has to gulp in order to survive in the job market. He highlights the vital nature of employability skills by terming them to be unavoidable and thinks that they “are often times the area that will determine failure or success for many in the workplace in personal life as well as individual contractor. Some of the most important people in the world are failing, because though they have mastered the hard skills, they can’t cope with the world that is fuelled by soft skills.” (Dorsey 2004).

In addition to the above stated perspectives on employability skills it has also been defined by Keller, Parker, and Chan as an assorted array of knowledge, skills, and attributes that are relevant for the workplace (Keller et al. 2011). Employability skills include two categories of skills: technical and soft skills (Omar et al. 2012).

However, to inculcate these skills among the students an interactive methodology has been adopted which generates their interest and enable them to gain proficiency in soft skills.

26.3 Methodology

The main objective of the course Business communication is to provide training to the students in both the oral and written communication skills, necessary for various managerial activities such as conducting and participating in interviews, discussing in groups, presenting individually and in teams, speaking in public, giving instructions, conducting meetings, etc. The components included in the course along with the proper interactive delivery in classrooms enable the students to understand and demonstrate the use of proper and advanced writing techniques that today’s technology demands including anticipation and audience reaction. As it is a course offered every second semester, so the methodology, case studies and the assessments vary in order to bring in a fresh perspective every time.

The course has several components such as initial lectures based on providing exposure to different kinds of communication activities in an organization so as to better equip the learners with the nuances associated with the significance of different

kinds and modes of communication. The objective of the case studies adopted for the communication module is to create an awareness among the students about the professional working environment and it establishes a base for learning the soft skills.

Case study 1: After giving them theoretical inputs through certain examples, the students are asked to visit different work segments of BITS Pilani Library and come up with all the essential aspects related to interpersonal communication associated with the working of Library. The same case study is evaluated as an assignment where the focus is on the following skills:

- Motivation to work in teams
- Attending team sessions and
- Delivering Presentation
- Handling questions and answers.

In addition to teaching the essentials of communication for managers' students are encouraged to come up with their own presentation topics and all the topics are further discussed in the class to avoid repetitions. In this exercise, they develop the skills to discriminate between the important and not so important topics and after a lot of deliberation among the team members a final decision about the topic is taken. The learners are also encouraged to participate openly during classroom lectures so as to provide them a friendly ambience and allow free exchange of information on any topic. The different soft skills teaching modules are dealt with separately as discussed in the upcoming sections.

26.3.1 Professional Presentations

During their professional presentations certain yardsticks are provided to them regarding the following parameters:

1. organization of content
2. different delivery modes
3. significance of engaging the audience
4. specifics of non-verbal communication
5. time management.

At the end of every presentation, instructor shares the feedback and marks are kept for students' involvement and handling questions from the audience. The presentations are individual presentations or team presentations depending upon the strength of the students.

26.3.2 Group Discussion

It is another important component included in this course wherein topics ranging from general, abstract to the more specific ones related to any current event are included. In order to make students feel more involved students are advised to provide their own topics of interest. In-depth knowledge with an accurate display of a range of original ideas during group discussion is a desirable trait evaluated in a participant. Analytical ability, logical thinking, ability to convince people of one's ideas and making them agree to your desired notions is an indispensable characteristic tried and tested in group discussions. Hence, the students are made to go through a mock group discussion first so as to know the kind of level they have and their degree of involvement in the team as a member and also knowing the skill to showcase contradiction, agreement

Persuasion in work place situations is another significant aspect student should develop during the entire group discussion process. Group discussion is introduced to them as an activity not just significant for their placement process but also as an integral aspect of the organizational growth wherein they have to deal with different kinds of issues and hence are adequately trained to have qualities of originality, innovation, conviction, confidence and maturity. Responsible way of solving problems with workable solutions and decision making skills are some of the traits students develop through these group discussion exercises.

At the end of the group discussion, they are asked to rate themselves on distinct parameters and the same kind of feedback is taken from the audience who are asked about the loopholes of the group discussion on both the topic being discussed and the kind of delivery of the participants. Here also lot of interaction takes place among the entire class which makes the students feel not just passive recipients but active contributors allowed to offer their own insight into the topic being discussed.

26.3.3 Interviews

Another vital module, which is very well handled in the course through less theoretical content and more practice based activities. In the initial interview sessions, the students are divided in groups and made to study on their own and through interaction with their seniors who are undergoing placement interviews. In the class, they are divided in groups of five to six students depending upon the strength of the class and asked to write on a sheet of paper the possible questions that can be asked in an interview and think of some possible answers. Entire lecture sessions are made interactive and theoretical concepts are very well integrated with the possible areas and the probable answers. In the next step, they are made to undergo a rigorous personal interview session in the instructor's chamber and two more subject experts are invited to form a panel.

In order to bring seriousness among the students they are asked to dress up formally, prepare complete Curriculum vitae and come for the interview. The criteria for evaluation is based on the parameters is based on the parameters such as:

- Personality
- Knowledge
- Communication skills
- Leadership skills
- Problem solving skills
- Decision making skills.

Each student is allotted fifteen to twenty minutes for the interview round and questions are asked by the panelists including the instructor to test the above stated traits. At the end of all the interviews, the feedback of the panelists is shared with the students and the marks are announced along with the areas of strength and improvement. The students are asked about their experiences about the interview component and their possible suggestions are also noted by the instructor.

26.4 Results and Conclusion

Feedback from the students after every session is considered mandatory which lets the instructor test the knowledge acquired during the entire course. Out of 80 students registered in the course at least 75% rate the course to be successful in inculcating the soft skills among the entire population. On being asked about the components they considered the most important and interesting ones some students rate the components differently but Group discussions and interviews are being rated as the most important skills due to the urgent requirement in their placement process.

However, there are certain differences in terms of the fluency in expression and the language as there are certain students who are not at par with the mainstream engineering students due to their educational background and hence their performance is not as good as the engineering students.

Practice based components and the interactive methodology enables the students to learn better and provide them an opportunity to not only learn through doing but also gets an exposure in understanding the indispensability of the skills which is considered to be quite insignificant during their college years and can be learned later. As the students in BITS Pilani are highly proficient in their language they are also made to learn the difference between language proficiency and the honing of skills required for their future job. Realization of this urgent need of human skills prompts them to work hard and participate not just during classroom sessions but even after lecture hours to discuss the possible strategies to further improve these skills. However, with the changing classroom, teaching scenario, which should be more of practice oriented rather than merely confined to delivering lectures there is a need to continuously update the teaching pedagogy to be more and more interactive and task based.

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