

Sustainable Employability Skills for Engineering Professionals

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This paper aims at exploring the skills set required for sustainable employability of engineering graduates in India. In most of the Indian engineering colleges, students are from different academic backgrounds coming from different places having different mother tongues. So, there is a need to provide them a common platform to make them competent enough to face the real challenges of today's corporate world. English is the language which can remove the lingual difference among them and give them a common medium to communicate. According to our findings that students with skills like positive attitude, effective communication, problem solving, time management, team spirit, self-confidence, handling criticism, flexibility, etc which are also known as soft skills as a whole, have much more better chances of survival in the tough corporate world compared to the students who are lacking in the soft skills

Employability skills are very essential in the current global job market. These skills can be termed as soft skills, which are given utmost importance in campus interview. At college level education, it will be a productive venture to incorporate these skills in the syllabus. This will certainly help students develop their employability skills and it will make them execute the assigned works efficiently in any institution after the selection process. This paper tries to list the skills needed for the students to get employed in reputed companies and show how these skills are important for them to work in a performance oriented work environment. To fulfill these aims of this paper, the researcher has read some related articles and also collected data from students and placement officers by using interview schedule as research tool.

Procedure used to collect data:

The necessary data for the study have been collected through an interview schedule. The researcher has prepared two different interview schedules, one for the students and the other for the placement officers. Around 15 students and 15 placement officers have been contacted for the collection of data. The collected details have been analyzed and interpreted objectively. About the sample, it is necessary to mention that the placement officers are those who arrange for training and campus interview for the students. In the case of students for the study, it will be relevant to mention that they are working in reputable institutions after the selection process.

Review of Related literature:

The articles found in journals and internet resources emphasize that there are seven skills, which can be called soft skills, should be incorporated in the syllabus. These skills can become a part of the syllabus at the tertiary level. This sort of effort will certainly improve the employability of the students and make them fit persons for the jobs in any institution. It also indirectly reduces the expenditure incurred for conducting training programmes after the selection process by the companies. In other words, education and training for the relevant soft skills should go hand in hand.

There are several articles concerned with the identification of soft skills and the implementation of these skills through different models in higher education.

A. Soft Skills

The seven soft skills are,

- i) Communicative skills
- ii) Critical thinking and Problem Solving skills
- iii) Team work
- iv) Life-Long Learning & Information Management Skills
- v) Entrepreneurship skills
- vi) Ethics, Moral & Professional
- vii) Leadership skills

It will be beneficial to give a brief summary of sub-skills of each soft skill. In the case of '**Communication Skills**' the following sub-skills can be taken into account.

- a) Ability to deliver idea clearly, effectively and with confidence either orally or in writing.
- b) Ability to practice active listening skills and respond.
- c) Ability to present clearly and confidently to the audience.

Next, '**critical thinking**' are also important for job seekers. The sub-skills under this category are: **a)** Ability to identify and analyze problems in difficult situation and make justifiable evaluation, **b)** Ability to expand and improve thinking skills such as explanation, analysis and evaluate discussion, **c)** Ability to find ideas and look for alternative solutions, **d)** Ability to build a good rapport, interact and work effectively with others.

Then '**Team Work**' another soft skill which is indispensable for those who would like to work in IT industries. The sub-skills of 'Team-work are: **a)** Ability to understand and play the role of a leader and

follower alternatively, **b)** Ability to recognize and respect others attitude, behavior and beliefs.

The fourth category is **'Life-Long Learning'** and information management skills. It includes the sub-skills such as **a)** Ability to find and manage relevant information from various sources; **b)** Ability to receive new ideas performs autonomy learning.

'Entrepreneurship Skill' is the fifth of soft skills which is related to the ability of identifying job opportunities. The next category of soft skill is **'Ethics, moral and professionalism'**. It includes two sub-skills. They are: **a)** Ability to understand the economy crisis, environment and social cultural aspects professionally, **b)** Ability to take decisions related to ethics.

The seventh category is **'Leadership Skills'** and it is concerned with the ability to lead a project and knowledge of the theories of leadership.

Some articles list around 60 soft skills, but all these skills can be brought under the above discussed seven categories. Therefore the focus on these categories will be sufficient for those who would like to be successful in their chosen career.

B) Models of implementing soft skills in Higher Education

There are two different models that facilitate learning related to soft skills. They are: **i) Stand Alone Subject Model** and **ii) Embedded Model**. The first model offers specific courses and elective courses to develop soft skills. In this model, students are encouraged to take additional courses, which are in no way related to the main courses. For example a student who is pursuing engineering course is encouraged to take additional courses like 'Management' and 'Mass Communication'. However, such an approach will require an increase in the number of credits and time spent for the particular programme.

But the Embedded Model incorporates the soft skills in the teaching and learning activities across the curriculum. This model does not require students to choose additional courses because soft skills become the part of the learning outcomes of the respective courses. It includes activities like questioning, class discussion, brain storming, team work, presentation, role play, project, field work and site visits. However, this model is a challenging one as the teachers have to master specific teaching and learning skills and then apply these skills in the respective courses for the specific programme. Moreover, this model is based on student centered learning and it focuses an experimental

learning, problem-based learning. Besides it gives students the practical experience. Some of the appropriate strategies and methods that are practical include i) learning by questioning, ii) cooperative learning, iii) problem-based learning (PBL), iv) e-learning.

Apart from this, there are certain informal programmes that also develop soft skills among students. One is related to support programmes which involve two divisions:

- i) Academic support programme,
- ii) Non-Academic support programme.

English Language Support Programme (ELSP) is an academic support programme. Then courses like 'Personality Development' can be brought under Non-Academic programmes. In addition, soft skills training can be offered through campus-life activities.

Thus the list of soft skills needed for the students and the models through which these skills can be developed in higher learning institutions are discussed elaborating in the internet resources. In this juncture, it will be relevant to see whether the curriculum for B.E. / B.Tech. Engineering courses offered in Technical Universities fulfills the expectations of the employers or administrators. To achieve this aim, the researcher has contacted students and placement officers working in engineering colleges with separate detailed interview schedule.

Procedure used to collect data:

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This paper tries to list the skills needed for the students to get employed in reputed companies and show how these skills are important for them to work in a performance oriented work environment. To fulfill these aims of this paper, the researcher has read some related articles and also collected data from students and placement officers by using interview schedule as research tool.

Analysis of Data and Interpretation:

Skills needed for the students to get through the campus interview

Out of 25 students, 15 students have listed the following sub-skills. They are

- Ability to deliver idea clearly, effectively and with confidence either orally or in writing.
- Ability to practice active listening skills and respond.
- Ability to present clearly and confidently to the audience.
- Reasoning skills
- Presence of mind

Majority of the students also say that the following skills are essential

- Ability to identify and analyze problems in difficult situations and make justifiable evaluation.
- Ability to expand and improve thinking skills such as explanation, analysis and evaluate discussion.
- Ability to build a good rapport, interact and work effectively with others.

Some students even say that the ability to understand and ply the role of a leader and follower alternatively

- Ability to recognize and respect others' attitude, behavior and beliefs.

While answering to a question related to the kind of special training after the selection process the students say that the following things are very much stressed.

- a. Grammar
- b. Book reviews
- c. Debate
- d. Public Speaking
- e. Quiz
- f. Role play
- g. Group Discussion

Skills needed for sustaining employability in the reputed companies

- Life-Long-Learning & ability to find and manage relevant information from various sources.
- Ability to receive new ideas performs autonomy learning.
- Ability to identify opportunities.

Some of the students say that lacking the following sub-skills may lead to their termination.

- Understanding the economy crisis, environment and social cultural aspects professionally.
- Ability to analyze and take problem-solving decisions related to ethics.

In addition to all the above skills the candidates are expected to have the knowledge of the basic theories of leadership and the ability to lead a project.

Some students feel that the current English course at the First year Engineering Degree in engineering colleges is not helping them for their selection process. Most of them feel that lot more changes could be brought in the existing curriculum.

English Course in the first year B.E / B.Tech has to be modified. So that it will help the engineering graduates to get the exposure to the necessary skills set, which will in turn result in better placement opportunities.

Almost all the students say that more thrust should be given for soft skills from the beginning of their B.E. /B.Tech. degree program. They also say that soft skills training can be introduced not only in the first year but also in the second, third and final year syllabus. This will result in improvement of their soft skills and also enhance their success in placement interviews.

Interview schedule for placement officers

Majority of the placement officers say that the soft skills are very much essential for the students to succeed in the campus interviews.

According to some placement officers, the students who do not have requisite skills set are getting rejected at the time of their campus interviews.

The placement officers also say that in most of the leading engineering colleges soft skills training is being outsourced. Soft skills training and personality development programmes are conducted once in every year for 2 to 3 days. Only this much is done by the training outfits.

The placement officers suggest that the soft skills training has to be incorporated in the curriculum and it should be spread over all the four years of their B.E. /B.Tech degree program. This will enhance the students' performance in the campus interviews.

The placement officers strongly feel that soft skills should be imbibed with the existing curriculum. Both the technological skills and soft skills are equally important for a successful engineering professional. Moreover, this will be highly helpful in their career growth and sustainable employment.

Measures taken to help the students

- During the first year B.E. /B.Tech. course an orientation program is conducted.
- Personality development programme is arranged for the second year students. This training program is spread over for 3-4 days.
- Third year students undergo a soft skills training program for 3 days.
- A training program on interview skills is arranged during the final year of their program for one day.

These are all the measures taken by the management of the engineering colleges in Tamilnadu. Mostly all these training programmes are outsourced to soft skills training outfits. Once the training is over students also gradually forget what they learnt in the training.

Suggestions

Training on soft skills becomes more relevant in a country like India where the education system does not delve into personality development. Soft skills training is essential because we do not have it in our academic curricula. Therefore, corporate houses have to take up the task of grooming employees who are the link between the company and the external world, so that they are able to present themselves better.

Instead of outsourcing the soft skills training it is recommended to bring soft skills within the curriculum.

The present English course in the Engineering colleges communication skills alone. The other aspects of soft skills can be brought in the curriculum irrespective of the subject.

More thrust has to be given for role play, group discussion, seminar, presentation, questioning, brain storming, book reviews, interaction etc.

This will initially be more challenging i.e. bringing a thorough change in teaching methodology in the existing system but if we bring this sort of change in the existing curriculum this will result in enhancing the skills set of the students and their personality as a professional.

Soft skills training need not be confined only with English curriculum but also it could be extended to all the other subjects also. Initially it

would be more challenging but it would be like by the learners. This will bring in lot more changes in the learning as well as teaching.

The entire teaching should be learner centered approach rather than teacher centered.

The industry people do not want to spend their time on soft skills training again instead they expect the candidates who are industry ready.

In such a case the necessary changes have to be made in the teaching methodology and curriculum as well to meet the expectations of the corporate. A lot of time and money spent by the corporate can be saved by introducing necessary changes in the curriculum teaching methodology.

Conclusion

NAASSCOM is India's National Association of Software and Service Companies, the premier trade body and the chamber of commerce of the IT software and services industry in India. NAASSCOM is a global trade body with over 1100 members, of which over 250 are global companies from the US, UK, EU, Japan and China..

NAASSCOM has come out with a study which states that some of the world's most admired and respected companies like Accenture, Convergys, Dell, Google, HP, IBM, ICICI, ITC, UTI Bank, Centurian Bank, Microsoft, Satyam, Tesco, Verizon to name a few across industry verticals are in need of the industry ready candidates.

We have to exploit this opportunity to get placed our students in anyone of these companies by equipping the students to meet the expectation of the industry. We have to bring in necessary changes in the curriculum and teaching methodology. The industries are looking for the young and talented professional to strengthen their presence in the highly competitive corporate world.

Apart from imparting technological knowledge input the engineering colleges will have to focus on nurturing the employability skills so that they can empower the talent pools.

The real challenge before the teaching community is positioning ourselves as a neutral ambassadors in providing necessary inputs on the employability of the students through scientifically designed curriculum and assessments to meet the demands multi nation companies in today's scenario.

The technological institutions are expected as well as forced to work as a placements sourcing or a training firm. Naturally the teaching

community will have to do the role of a trainer's job apart from teaching .The syllabus has to be designed to enhance the employability skills of he individual candidates and help them to get placed in Multi Nation Companies.

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