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Communication Skill: A Prerequisite for Engineers

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Abstract: *Teaching English to engineers is a delicate and demanding matter in terms of content, methods and techniques, and deciding which are appropriate for this particular area of engineering and English. The aim is to develop and master relevant communication and professional skills, using English as a means and a kind of mediator in shaping future engineers. Apart for their acumen in the technical skills, they must be well-versed in communication skills, in which Universities can play a key role to shape the future engineers to cope the growing demand of interacting as well as writing skills. The aim of this paper is to gauge the present scenario of the technical world, role and importance of communication in it, and the need for an engineer to sustain his talent as well as compete with the world holding two weapons-technical skills and communication skills.*

Keywords: *communication, skill development, education, professional importance*.

1. INTRODUCTION

Education is consistently identified as one of the key strategies for facilitating sustainable development; the required shift in thinking, values and actions of individuals and institutions calls for efforts to make sustainability concerns, a central theme of all education.

For many years, in the masses there has been made a stereotype of the working engineer. This is a person who spends ten hours straight in front of his computer, making some strange graphs and calculations. But a conversation commences he says that he has a lot of work to do and tries to run away as fast as possible. This picture may be a little exaggerated, but it is how media and television draw it. Globalization directly influences industry's needs; a global engineer must be able to easily cross national and cultural boundaries. This in turn directly affects engineering education.

In this context professional engineers certainly need effective and impressive communication skills. There is a growing expectation that universities should directly meet the needs of industry standards and deliver global engineers who are not only competent in technical skills but also in non-technical skills such as communication skills. A number of engineering faculties in universities fail to address this need for the introduction of such courses. "Many engineering graduates in India are found to be unemployable due to their poor communication skills and lack of confidence. There have been a lot of research papers that have recapped the importance of improving engineering graduates' employability skills; however, the problem of poor communication skills grows unabated in India." (Clement A. and T. Murugavel, 2015).

2. TODAY'S ENGINEER: A CHANGED FUNCTION

English will be the linguistic bridge in international engineering projects. The importance of multilingualism for the global engineer is not confined to learning English. "Multilingualism in an engineering course is increasingly focusing on regional communication skills, where the main languages from within that country's region are becoming just as important as learning English. Globalization directly impacts needs of an industry; a global engineer ought to be able to effortlessly cross national and cultural boundaries."(Kitao K, 2015) As the world develops into regional networks, multilingualism has become vitally important. English has been widely accepted as the most widespread language in the world. This directly affects education of an engineering student. A common encryption for communication is required. "Those education institutions, which meet the language requirements for the new global engineer, will be ready to face the new millennium. The insufficient level of communication skills instruction in engineering education generally only serves to undermine the whole profile of the professional engineer. This in turn affects recruitment and retention in engineering studies" (Marc J. Riemer, 2002).

The role of engineers in society is changing and places new pressures and demands on engineering faculties in the Universities around the world. Engineering education requires a broader perspective with the ability to produce graduates who would be able to lead the engineering profession with its increasing pressures and challenges arising from the broadening roles of an engineer. Engineers are required to perform not only in technical capacities but also in the non-technical capacities. Showing its importance one of the eminent writer observes, "Good English Communication Skills are a vital element of an engineer's profession and the lack of such skills only undermines the image of an engineer." (S. Shikha, 2012)

One of the major reasons for the failure of engineering students in interview is lack of communicating effectively with their prospective employers. Many final year students are falling short of confidence to face their campus placements. Acumen in communication does not end with being selected for the job. Besides, his technical skills he requires excellence in interpersonal communication skill to deal with circadian activities. There is only twenty percent of actual engineering and eighty percent of writing and communication between co-workers and superiors. Employers are not simply looking for technical skills. The workplace requires people who are able to work cooperatively with others. Nowadays, the employers don't look for engineering nerds who will spend all work time in the office with an engineering calculator. Even if you are the greatest engineer nobody will recognize you if you cannot explain to others your thoughts and ideas "Three sources of weakness that can significantly impact on an engineer's communication skills education were identified as:

- Students' attitudes to communication.
- Insufficient course content.
- Deficient or inappropriate teaching methods.

Another significant element included the lack of opportunity for engineering students to be able to practice communication skills, particularly the oral component." (Roulston, J.D. and Black, R.W, 1992)

Another prerequisite of technical communication is writing skill, an ability to write effectively in a range of circumstances and for different audiences and purposes, in good English using memorandums, reports, bulletins, job descriptions, employee manuals, electronic mail (e-mail) letters, telegrams, faxes, contracts, advertisements, brochures or news releases.

Any engineering career starts from the resume writing. Usually a resume consists of two parts: the list of things that you have done well in your life and the cover letter. Dr. Craig Gunn, a professor of mechanical engineering, Michigan state university, clearly explains: "Many big companies do not require the cover letter, but it will be much better for you to write one, because if a manager will read it for some reason, your chances to get a job will be a lot higher." (qtd. In Osterman, 1997)

An employer who offers you a job will not see you directly, so you have to convince him or her not to throw your resume in the basket by presenting all of your best qualities in the resume. To write a good convincing resume is a very difficult task to accomplish without some preparations.

A cover letter plays an important role in getting a job too. In your cover letter, as Dr. Gunn suggests, "use all your writing abilities to convince the manager of your exceptional importance for this job, and you will be accepted." (qtd. in Osterman, 1997)

Smooth, grammatically correct and semantic error free cover letter increases chances to get a job very much.

Putting the notes on the paper helps to free the brain form memorizing and gives space for thinking about new ideas. Making notes is the first and the smallest part of the required writing in mechanical engineering, but it is as important as others.

Reports probably take only seventy five percent of all writing time of an engineer, and are the most widely used tools for job promotion. There is a big misunderstanding that reports are the papers with lots of hard and special terms that only the most experienced engineers can understand. In most cases, however, reports are written for those who do not have much to do with engineering and the goal of an engineer is to explain his ideas clearly enough so that the person who will read it will have an understanding of what the engineer has written there. Primarily, that is the reason why employers want people with good writing skills.

3. ASSIMILATION OF TECHNOLOGY IN COMMUNICATION

The assimilation of Internet and hi-tech technologies in our life has had a big impact on engineering too. Now the distance between the workers is not a challenging barrier any more. Many engineers working on one big project are connected to a single database; this is not a dream any more. E-mail letters are the most widely used electronic communication devices right now. It seems to be clear that while the important documents are sent by fax or mail, electronic mail is important only for informal letters to collaborators. The situation is much different in communication with superiors. As Dr. Gunn remarks: "The way to write to your work mates is free – you can use any style as you wish but the message to your boss should be made accurately and especially without any mistakes!" (qtd. in Osterman, 1997)

The reason is that managers want to employ literate and accurate people who can do important and precise work, and the grammar mistakes show them the opposite.

The most appropriate source of information i.e. Internet provides largely the information in English. During the job seeking process in interviews, GD's, it is obligatory to achieve mastery in English proficiency. After obtaining the job they are necessary to work in groups since their task seldom be solved by an individual. A Large number of Indian engineers have to now travel to many continents and work away from their home country. Also, among the scientists, technologists and business experts from culturally and linguistically different communities, English has become the crucial language for communication.

Presentation is one of the best ways to augment the knowledge. The student's knowledge base is amplified by earmarking class projects for presentations. However, students will not place any great prominence on presentation. Many students dislike giving presentations. "An Irish study found that 78% of sampled practicing engineering graduates were required to give oral presentations as part of their work, often on a regular basis." (Sharma, 2014)

Each good engineer has to do a research project. This is the time when he has to use all his writing skills to succeed. Sometimes it is necessary to spend years and years of preparations and search for information before the final draft. Over this period, the ability to summarize and make a conclusion is required.

All these skills are required if he goes to work in a giant corporation. But if he enters in a private business or into higher administrative circles the situation can be very different. In fact, there is some tendency now that the higher you get, the less engineering you have to do and the more and more communication and writing skills are required. "Engineering is a very broad profession that envelops many other sciences and specialties. Engineers cannot spend a lot of time behind the closed office door. They have to communicate and share ideas and thoughts with other collaborators and authorities." (Osterman, 1997)

When you open a private engineering company, you have to deal with government agencies. Private engineering businesses have to deal with tremendous amounts of the paper work where advanced engineering skills are required along with excellent communication skills.

Lastly, there is a need for English professors to train the engineering students for employability. The necessity for meticulous professional development programs for English professors working in engineering colleges is needed. Moreover, the teaching methodologies of faculty members need to be enhanced as large number of students want more interactive sessions to improve their language skills.

4. CONCLUSION

It can be concluded that today's engineer has to compete with the world holding two weapons-technical skills and communication skills. Good employees must acquire advanced skills to compile a data, precise and correct language and effective expression of thoughts. To excel in this competitive technical world, an engineer needs to be a multitalented person. The incorporation of language and communication Improvement courses is an important element of continuous learning, and will ultimately contribute to the process of life-long learning. Universities can play an eminent role in developing communication skills apart from technical skills in students to sustain in globalized technical world.

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