

English Communication -The Indispensable Skill for the 21st Century Engineer-A Study Against the Indian Backdrop

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Abstract:

Language is the means of communication for effectively conveying our thoughts and desires. As English has for long been the medium of instruction and communication in education, business, international trade, and commerce the medium of communication of today's civilization undoubtedly thrives on the English language which is an international language and thus an important factor in today's globalized world. Hence teaching of English is an essential component in the education of engineering students that not only facilitates but also prepares them for their careers. English is taught to engineers keeping in mind the current scenario which calls for the growing demand for social skills along with good writing skills. No matter what the level of technical ability in engineering, this is the most obvious skill needed.. There will always be a need to inform, educate, influence and persuade verbally within client feedback sessions, presentations, team briefings or demonstrations of new systems. Every email, report and project that is written, needs to be an effective communication tool. In this paper, the various advantages of good communication skills required for modern engineers is addressed and also how emotional intelligence (EQ) impacts communication .Alongside various techniques of developing communication skills and the potential areas for further research are also discussed.

Key words: *Effective Communication, English language, Engineers, EQ*

INTRODUCTION

One of the key strategies for facilitating sustainable development; which brings about the required shift in thinking, actions and values is Education. Since years, there has been a stereotype of the working engineer who is technically very sound and who spends hours at a stretch in the company of machines graphs and calculations. Striking a conversation makes him uneasy. The picture may be a little exaggerated, but but mostly it holds true . There is no shortage of evidence to support the claim that graduating engineers are not equipped with the necessary communication skills, especially in light of global industrial demands.[2][3]. As Globalization has a direct influence on the needs of the Industry; it is

imperative that an engineer be able to easily cross national and cultural boundaries. Ineffective and Inadequate skills in communication reflect badly on the individual and the profession. In this context professional engineers certainly need an ever-increasing range of effective and impressive communication skills to maintain relevance with the global environment of the new millennium. “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).

An 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 [6]. It has been stated that communication skills *should be fostered in engineering education* since these are attributes that employers value and that ought to be covered in any postsecondary education [7].

There is a growing expectation and demand from universities to recognize Communication skills as a vital component required to deliver global engineers as per industry standards who are not only competent technically but also trained to possess impressive communication skills. In India a number of engineering institutions fail to address this need for the introduction of such courses. The multifaceted aspects of Communication need to be considered when examining communication engineering education.

Communication skills are a regular feature of an engineer’s job in industry; some graduates employed in industry have identified that education in communication skills needs to be improved given the demands encountered in industry [4]. It is true that having effective communication skills can help you advance in your job [5].

The 21st Century Engineer: A CHANGED FUNCTION

As the role of engineers in society is changing it places new demands and pressures on teaching engineering in the Universities around the world as also in India. In international engineering projects, English has become the linguistic bridge. For the global engineer multilingualism is not confined to learning English. The main languages spoken in that country's region are becoming equally as important as learning English, and multilingualism in engineering courses is increasingly focusing on developing students' regional communication skills. Industry demands are directly impacted by globalization, so a global engineer should be able to move across national and cultural barriers with ease. (Kitao, K. (2015)

English directly affects the education of an engineering student, as it has been widely accepted as the most widespread language in the world “Those education institutions, which meet the language requirements for the new global engineer, will be ready to face the new millennium. The profile of the professional engineer as a whole is

typically undermined by the inadequate amount of communication skills taught in engineering education. According to Marc J. Riemer (2002), this has an impact on both recruiting and retention in engineering programs.

Engineering education in India too, requires a broader perspective to be able to produce graduates who would be skilled at handling the engineering profession with its increasing pressures and challenges arising from the expanding roles of an engineer. Illustrating the importance of English communication one of the eminent writer observes, "Good English Communication Skills are a vital element of an engineer's profession and the lack of these abilities only serves to damage engineers' reputations. (Shikha, S. (2012)

Failure of engineering students in interviews is majorly because of lack of effective communication with their prospective employers. Several students in their final year seem to be short on confidence and are unable to handle interviews competently. Besides technical skills the student requires excellent interpersonal communication skills. On the 20:80 ratio only twenty percent of actual engineering and eighty percent of writing and communication between co-workers and superiors exists. Just to say that employers are not simply looking for technical skills.

People with the ability to collaborate with others are necessary in the workplace. Employers today aren't searching for engineering geniuses who will labor nonstop in the office using an engineering calculator. If you are unable to communicate your ideas and thoughts to others, no one will ever know that you are the best engineer in the world.

WHAT EXPERTS SAY..... for 21ST CENTURY ENGINEERS

Kalani Jones,) Engineering Vice President at Tachyon Inc. (San Diego

"We look for people who can lead a team, someone who can get a small team—four to six people—motivated and a person who can quickly learn which people are best at doing what-
John Reinert, Engineering Manager at Aeroflex UTMC Microelectronics in Colorado Springs, Colorado "The soft skills are just as important as engineering skills"

"At a start-up a small company trying to win contracts, it's important to know how to use these skills very efficiently. Although the majority of people believe that dispute resolution only occurs in offices, it can also be a factor in contract negotiations.

Vern R. Johnson, Associate Dean, College of Engineering, University of Arizona (Tucson)
"The new skilled/global engineers must monitor what is happening in the global market to identify gaps in their knowledge, skills, and attitudes so they will know where to focus their learning." "Many employers prefer to hire skills over people." In order to arrange their work and educational activities strategically, they must become specialists in career development. They also need to learn how to study in order to close any learning gaps.

Joseph Lillie, the Bellsouth area manager in Lafayette, Louisiana thinks that the three non-technical abilities that people should work on improving the most are ethics, written communication, and public speaking. Ethics is the goofball in that group, which he defines as performing the morally correct thing. The important thing to remember is that, in addition to

having technical capabilities, you also need to be ready for situations where your interpersonal abilities are required.

The ability to write effectively for a range of circumstances, keeping in mind the different audiences and purposes is another prerequisite of technical communication. Using good English for the writing of memorandums, reports, bulletins, job descriptions, employee manuals, electronic mail (e-mail) letters, telegrams, faxes, contracts, advertisements, brochures or news releases requires a completely different set of skills other than the technical abilities.

An engineer begins his career from resume writing which usually consists of two parts: the presentation of his achievements and the cover letter. Dr. Craig Gunn, a professor of mechanical engineering, Michigan state university, clearly explains: According to Michigan State University, "Whilst many large companies do not require a cover letter, it will be much better for you to write one, as your chances of getting hired will be a lot higher if a manager will read it for some reason." (qtd. In Osterman, 1997)

Anyone who is offering a job ,gets to see first-hand just the resume and he has to be convinced of one's best qualities through it, so as not to throw it in the bin .To write a good convincing resume is a daunting task to accomplish without some preparations.

In order to increase your chances of getting hired, Dr. Gunn advises using all of your writing skills to persuade the management of your extraordinary relevance. (qtd. in Osterman, 1997)

A grammatically sound, error free cover letter increases the chances of getting a job.

Jotting notes on paper frees the brain form memorizing and accords space for thinking about new ideas. The smallest part of the required writing in mechanical engineering, is making notes but it is as important as others.

One of the most widely used tools for job promotion are reports. A big misunderstanding around reports is that they are papers with lots of hard and special terms that only the most experienced engineers can understand. But the matter of the fact is that, in most cases, reports are written for those who do not have much to do with engineering and the task of an engineer is to explain his concepts clearly to be able to be understood. Primarily, that is the sole reason for employers to want people with good writing skills.

ENGINEERING AND THE GLOBALISATION OF ENGLISH

International projects, and cross-cultural communication has seen a rise in this age of globalization and collaboration is building up around the world.; especially now when international practice of engineering has been introduced. It is acknowledged that English is the most widely spoken language in the world. [8]. The number of people who speak English with at least some degree of proficiency exceeds any other language [9]. This is vital for engineering students as it brings in its wake, the fact that, English will become more useful internationally than almost any other language due to its wide acceptance. According to references, English is the primary language used in science, the workforce, international business, and diplomacy [8].It is the prime means for communication, and serves as the *global language* between two people from two different cultures where

English is not the native tongue. For example, French engineers communicated with Egyptian engineers in English during the building of the Cairo subway [10].

Multinational firms use English as the prime form of communication in their base offices based in continental Europe. Multinational corporations in this sense, can be seen to bring about an indirect influence on the educational policies in foreign lands by value creation of certain languages through global economic power. This also delivers a strategic advantage to those institutions in non-English speaking countries like India, with effective English language instruction.

English language has become extremely relevant now and for the future, particularly as a *secondary* language to facilitate communication between two cultures.

Future engineers need also be aware of the potential for so-called cultural imperialism, which involves the systematic penetration and dominance of other nation's communication and informational systems, [and] educational institutions [11]. This goes beyond language hegemony.

Jensen states that employers want: ... a number of new competencies, with an emphasis on an increased ability to communicate ... and good foreign language skills [2]. Grünwald's analysis of the hard skills—such as proficient language skills—necessary for the engineer of the future serves as further evidence of this. He goes on to assert that linguistic proficiency across disciplines is not adequately taught [3].

This signals a lack of a direct fit between graduate skills and those required by industry.

Engineers can do with the same theories of mathematics, of mechanics and technology, but the modern 21st entrepreneurial engineer must also be able to communicate effectively in a shared tongue. This is especially necessary given the fact that engineering projects are now being planned and implemented across national and cultural borders.

In the United States there is a resilient monolingual culture of instruction in English. There is a similar culture in India where multilingual education is somewhat of an advantage, but is not compulsory. This differs to the compulsory education in the English language education established in many mainland Indian schools. Nonetheless, companies are requesting new competencies, like communication and foreign language proficiency, not only from engineering applicants in European countries, which calls into doubt the dominance of the monolingual [2]

It's amply clear that there is a necessity for effective English communication skills for Indian engineers in the current globalised environment. In the 21st century, all the developing countries use English in academics, technology, international business - news media, banking, tourism, computing etc. More than 1.8 billion people across the globe use English as their official language. In India, in all spheres of life, English has emerged as an associate official language

As across the world English is in a commanding position in the Indian education system from school to university level. Information and Communication Technology (ICT) uses English as a unique communicative language making the world a global village. As the biggest field of study in the world, nearly every single university conducts

the Engineering studies only in English. The Indian universities have also made English mandatory so that budding engineers, the non-native speakers, have to become conversant with this language to fulfil the demands of MNCs and global industries.

Being flexible, gender free and easy to learn English easily becomes a part of one's daily life. The last two decades, have seen an upsurge in methods of English teaching through online lessons which make learning English easier. English plays a pivotal role in communication as it widens the horizons opening doors to all round prosperity. Thus it is important to identify where and how second language skills can be melded in the already packed engineering curriculum, fostering the need for broader language skills given the increasing level of globalisation and engineering students' understanding of international linguistic diversity.

ADVANTAGES OF HAVING GOOD COMMUNICATION SKILLS

No matter how technically advanced one is, one needs to consult others, mobilise teams and liaise with those who commission your engineering skills. Being silent during someone else's speech or properly reading written correspondence are not examples of good listening.

- It involves using body language, verbal prompts, or insightful questions to grow the information available. As well drilling down on more layers of business intelligence, one can start to fully appreciate the motivations and goals of colleagues, clients and other parties.
- Showing to be open to feedback – and calm in the face of criticism – can be highly advantageous. One will also find people discussing their ideas more readily, helping to grow one's ability to innovate on engineering projects.

No matter what level of technical ability in engineering, this is the most obvious soft skill one needs. There will always be a need for one to inform, educate, influence and persuade orally, during presentations, team meetings, customer feedback sessions, or new system demonstrations.

- Every email, report and project spec that is written, needs to be an effective communication tool.
- Using the newly honed emotional intelligence and communication skills, one can negotiate better in engineering roles. Finding compromises and solutions more readily.
- One can also spot dissent and disinterest quicker, and become more agile in offsetting both, as well as using conflict resolution skills to stop projects from hitting brick walls.
- One of the many advantages of improving one's communications skills in engineering jobs is that one will be better able to translate one's ideas, concepts and end goals into something different audiences can understand.
- One can also engage them better and demonstrate the ability to innovate to secure more 'buy-in'.
- If one can unite a project team around a shared vision, one can get the 'nuts and bolts' tasks done better, quicker and in a more cohesive way.

7. COMMUNICATION ISSUES FACED BY INDIAN ENGINEERING STUDENTS

In India an engineer's communication skills education has been found to be significantly impacted by the following:

- Students' attitude towards communication
- Insufficient course content
- Deficient or inappropriate teaching methods
- Lack of opportunity for engineering students to practice communication skills [14].

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)

Gender Equality

Males continue to dominate the engineering profession. This was evidenced in recent statistics in India where the proportion of female engineers was found to be below 25%. Even in situations where they perform on par, women may lack confidence in their talents due to the historically male-dominated nature of engineering.

However, female participation is increasing at a much greater rate when engineering is coupled with another discipline as part of a double degree [16]. This is so because the student's skills base is augmented in other areas, including communication, as students are introduced to other subjects in tandem with the engineering degree.

Feedback from Engineering graduates

According to a research most graduates felt that they had acquired analytical and problem-solving skills, improved decision-making abilities, research and subject-specific knowledge, through their degrees. Yet despite this, most felt that their graduate degree was unable to provide

- Oral communication skills
- Management Skills
- Confidence and competence to work in inter-national environments [16].
- Awareness of the social implications of their discipline's developments;
- Understanding of others' point of view and other cultures;

Oral communication skills were given importance in the graduates' new work environments, but during their studies it was imparted at a very low level. Neglecting learning opportunities can endanger the understanding process and prove to be a hurdle for success later.

Oral communication skills

One of the finest ways to advance one's profession is through oral communication and presenting abilities, which are also the single biggest predictor of a student's success or failure in their career [5].

The rising importance by employers for oral communication skills has been echoed around the world across disciplines. Knowledge and technical abilities are important, but there is a need for their excellent presentation. That's where good oral communication skills step in. Developing communication skills is demonstrated through the use of various methods, such as discussions in class and others

More than the didactic means experiential methods are more fruitful. Peer evaluation, role-playing, presentations, videos of student presentations with personalized feedback, and

current training in essential software used in presentations by industry graduates (e.g., PowerPoint, Word, Excel, etc.) are a few examples [4].

Engaging learners will help in order to facilitate and stimulate effective and purposeful learning. Learners need to be engaged. Involving learners directly will inculcate a stronger sense of responsibility in future graduates which they can carry forward to their workplace.

Listening skills

It has been asserted that we spend 70% of our time awake in some mode of communication, which is comprised of the following proportions:

- 10% writing; 15% reading; 30% talking; 45% listening [17].

Listening is important in the workplace, as Kline further confirmed [17].

Hence, it is vital across the professions, including engineering. Listening involves the reception and correct understanding of verbal communication and without effective listening skills, the communication can be distorted or even ignored, causing the communication process of communication to fail.

An engineer's training relates directly to work-based activities. An increasingly staple task in engineering, team-based assignments, can be aided through the incorporation of such listening skills exercises.

Written communication skills

Writing can enhance critical thinking and problem-solving skills, as well as serve to identify and confront personal misconceptions [18]. Graduate engineers have reported an increasing written communication workload over time [4]. Here writing refers to compositions to be read typing included.

Ineffective and poor written communication in engineering workplaces were found to lead to mis-interpretation, inefficiency and time wastage, thereby adversely affecting problem resolution. Such miscommunication was then found to contribute to mistrust and aggression, as well as appear unprofessional and be unproductive [4]. This indicates that those with poor communication will face trouble in the workplace, that is potentially contributing to problems.

Written communication needs to be benchmarked meaning in relevance and proper implementation. It should also provide accurate assessment and generate feedback, as well as make a positive and permanent impact on student learning. Engineering reports, technical writing, essays, reflective journals, peer review, and student *conference* papers are some examples of written communication.

Interdisciplinary communication

An important aspect that also needs to be considered is communication between disciplines. Today because of globalisation it's not just engineers dealing with engineers from other cultures; but involves effective communication across disciplines, such as management and engineering. Engineers too need some basic management skills, including entrepreneurship skills, to interact with, and operate, business ventures.

Entrepreneurship skills are gaining recognition as important skills for engineering graduates and communication skills are absolutely essential for developing such skills, as an engineer-entrepreneur has to communicate his/her idea to others right from concept to development to implementation and use.

It is being realized even in India now that introducing interdisciplinary projects at the university level promote the development of teamworking skills in students. Therefore, incorporating this is becoming a vital component for current and future engineering curricula not only here but around the world.

Humanities and the social sciences have a lot to offer in the education of future engineers. But according to Sjurson, this runs the risk of overloading an already full engineering curriculum and calls for intercultural mutual norms in order to dispel any imperialist mindset.

Sjurson goes on to recommend increased discursive alliances based on mutual respect between engineering and humanities educators so as to *enrich understanding* and that *engineers must be humanists to exercise their vocation responsibility* [27]. His example of a multidisciplinary class at the Brooklyn Polytechnic revealed that diverse student teams were assigned, encouraging discourse between team members that provided them with new perspectives through collaboration; he also comments on how engineers need to be able to take into consideration the target audience when delivering presentations and communicating information [27].

ALTERNATIVE TEXTS IN ENGINEERING EDUCATION

Alternative texts can help in foster communication skills in engineering, as well as broaden students' imagination and understanding of concepts and disciplines beyond the current engineering domain. Such alternative texts include science fiction and so-called techno-thrillers, which can present topics and ideas outside the current scope of science and engineering. Such texts do not undermine the core knowledge required of practicing engineers, as students can question the viability of technological aspects within the recognised framework of fiction [28][29]. Ward has utilised various non-traditional texts to impart to students knowledge of engineering management and safety, among other subjects [30][31].

Intercultural communication skills

Gaining intercultural competency is a need for effective international collaboration. Intercultural competence incorporates a broad variety of human relations abilities in addition to language proficiency [33].

It is also a

key determinant influencing intercultural negotiations [34]. Implicit language and peculiarities specific to different cultures are some of its components.

A communication recipient's own culture serves as a filter through which the message is understood. The message sent and received could differ because of how much this filter colors the message. Most of the time, the communication's source will be understood in the sender's context. It has been determined that culture affects every aspect of the communication process [35].

The communication actually received is ultimately more important than what the communicator thought was sent [34]. It should be noted that the development of nonverbal language skills within the important cultural context(s) of the language being studied must go hand in hand with the verbal language skills.

Indeed, learning the non-verbal *signals* of certain cultures will serve to make the individual a more powerful communicator [36].

Senge's concept of personal mastery offers important lessons on enhancing intercultural communication skills [37]. Inquisitive and striving for accurate perception of reality, as well as a sense of connectedness to others and life itself, are characteristics of those pursuing personal mastery, according to Senge [38]. A procedure like this will help with learning about cross-cultural communication and the potential for first discord. Senge also states that individuals teach organizations; hence, organizational learning will eventually benefit from individual intercultural communication training.

EQ & COMMUNICATION SKILLS

The term *emotional intelligence* (later dubbed EQ) was first defined in 1990 by Salovey and Meyer [40].

Since then, their research has been further broadened by Goleman, who found that EQ—a collection of abilities unrelated to academic aptitude—is more crucial for success in life and the workplace than IQ [41][42]. Goleman classified emotional intelligence into five domains: motivation, self-regulation, self-awareness, empathy, and social skills. These topics can be covered in classes that help students get ready for professional careers.

Since that employers in the engineering industry rank communication as one of the most important characteristics, EQ plays a significant role in enhancing communication skills.

. Similarly, it has been shown that incorporating a greater emphasis on communication activities served to enhance EQ aspects, including more active participation, greater self-control and awareness, heightened motivation and a better understanding of course material [43].

IQ is strongly dependent on EQ. For the manager who has the last say, a detailed report from an extremely intelligent engineer could be nearly impossible to understand.

Social skills and Intellectual accomplishments can be enhanced through EQ. Goleman also states that leaders need to be collaborative and make decisions by listening to what others think [39]. This has clear implications for engineering education; engendering a collaborative study environment and advancing communication skills between students, as well as within and across teams, is vital for the advancement of engineering graduates in the workplace. It is acknowledged that experiential learning offers ongoing possibilities for improving emotional intelligence (EQ); interestingly, the same brain region linked to reasoning abilities also supports EQ abilities [39].

Empathic managers and leaders could communicate openly and pro-actively, and they were also excellent listeners, which allowed them to successfully guide their organizations through challenging changes [44].

Empathy skills are required in managing interpersonal relationships in the workplace, and this proves to be a lesson for all engineers especially those in the management roles.

Goleman also highlights the connection between fluency in non-verbal skills and empathy [41]. Non-verbal cues and awareness are an important component of communication that is not restricted by language. Goleman goes on to state that *mastering this empathic ability smooths the way for classroom effectiveness* [41].

Research suggests that empathy is directly influenced by listening abilities [45].

Good listening skills are especially important for engineers engaged in the design and construction process, as they help them to become more aware of the other person's needs and wants

DEVELOPING COMMUNICATION SKILLS

A review of literature indicates that oral communication has been identified as a *learnable skill* and that experiential methods have generally yielded better results than purely didactic means [5]. Hence they can be developed through, engaging learners in presentations, peer reviews, role-plays, video/audio grading, that is to say through active involvement of the learner and team-teaching collaborations.

While it's vital to provide individual feedback, it's also important to choose the rating characteristics carefully and define them operationally so that all students are held to the same standards of accuracy and consistency [48].

FUTURE RESEARCH

Understanding the relevance of English in today's time, educational institutions in India must apprehend the demands of the industry and impart to engineering graduates the required skills.

Potential future research in this regard could be :

Identifying how communication training can be integrated into engineering subjects .

CONCLUSION

Along with the technical skills learned in the classroom, the Indian engineer of the twenty-first century must master the art of English communication if he is to compete with the rest of the world.

As Language and communication skills are recognized important elements , in order to excel in this competitive technical world, an engineer needs to be a multifaceted person. He must acquire advanced skills to compile a data, precise and correct language and effective expression of thoughts. Universities can play a prominent role in developing communication skills apart from technical skills in students to help them find their niche in the globalized technical world.

Institutions that have already implemented multilingual and communication elements will be at the forefront of providing the demands of industry and society.

Although the engineering curriculum is already crowded the integration of language and communication improvement courses shall prove fruitful because of the incorporation of additional competences, notably workplace and international intercultural skills, especially communication.

This incorporation is an important element of continuous learning, and will ultimately contribute to the process of life-long learning also facilitating advancements in engineering.

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7.1 English as Obstacles: In India, more than 75% of engineering students are from vernaculars and they feel that English is souring grape and it becomes an obstacle in their daily life and career. Most of the engineering books are in English including lectures, practicals, tutorial, project reports, paper presentation, making project books and the source of internet information. Although, they have necessary qualification and intelligence, they could not clear their university exams and not possible to perform oral and written presentation successfully due to making the use of English is necessary in all the activities.

7.2 Lack of Revelation to English: English as non-native language of Indian students is very difficult to learn and understand by them. Like every language, it can also possible to learn through the most important activities - *Listening, Speaking, Reading and Writing (LSRW)* through which students can learn and understand the accent of English words and word groups and speak like native speakers. In Indian schools and colleges, English is treated as a subject not as a language and students are forced to learn English only through the subject books and not encouraged to read and present different kinds of books to improve the tongue. Students in maximum of their studies learn only questions and answers given by the teacher which limits their knowledge. They are not educated by saying *reading the whole books and their reference helps them to have vast knowledge of the curriculum and they are also not motivated for writing answers by their own words to improve their creativity.* Definitely, these activities will navigate them to move ahead availing more and more opportunities around the world but they were not guided for it by both teachers and parents.

7.3 Reason for Lack of Fluency: Mostly, in lectures, learner's first common language is used for certain explanation and translation to make students to understand the concept but the target (English) language is neglected. Even if they are good in their core technical skills, English always made them to feel a very low self-esteem and unworthy. The lack of fluency in English communication always makes them to keep back from participating and applying courses. So, for improving students' efficiency in English communication presentation skills, English must be used as a medium of communication in lectures and practicals.

7.4 Controversy upon Learning English as a Second Language: There is a lot of controversy upon learning English as a second language. A language is a tool for learning the literature of all the subjects (including English Literature) and its grammar is just a tool for developing and using the language skills. In India schools and colleges, English language is treated as a subject of the curriculum due to this situation, the application of English grammar in day to day life is being neglected and it is learnt only for the sake of getting marks and not for learning the language. Please question yourself that "*Had we learnt grammar of our mother tongue earlier when we learnt it?*" So let children learn language at first then its grammar.

7.5 Lack of Skillful Teachers: Most of the teachers, who are at the regional medium and primary, secondary and higher secondary English medium schools of rural or semi urban areas, are untrained and unaware of current trends and advanced technique of English Language Teaching (ELT). Teachers make students to habituate by heart learning as a result: English seems to be a dreadful demon for the students and this fright remains in the mind till their higher education. They follow much *exam result oriented teaching* –learning process which tests the memory power alone but not creative skills. This habit leads students to give prior importance to their technical subjects than to the communication competence in higher education. Even, their parents' passion is more in marks than skills or knowledge.

7.6 Lack of Family Guidance: Last few decades, the middle and lower class people have preferred English medium for their wards' education. The students who possess *different grasping power* and *English Communication Competence* are lack of parental supervision and guidance for their higher education. Since their birth, they start to use English language to acquire knowledge of relations, culture, traditions, society but it is not enough while doing higher education. The literate parents who knew the importance of English communication provide more exposure to their wards and guide them at home to perform better but this never happens with those students whose parents are illiterate. Family guidance will help students' growth and development in all aspects - *at home, at institution and in society.*

8. REMEDIES TO COMPLICATIONS

Directing students as per a teacher's point of view restricts them from doing things independently and creatively. Instead of forcing them doing by-heart learning, provide them facilities how to comprehend the

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concept with proper grammatical terms and then motivate them to write their own ideas and views and also allow them for self-learning and creation.

8.1 Regional Language VS English: When we learn regional language, it comes naturally but it takes a lot of time and it does not require learning grammar. Unluckily, it does not happen with English because as it is not our native language, it does not come naturally and not easy to attain the level of accuracy and comfort. In India, English language is treated as a subject instead of considering it as a tool to learn the literature of all the subjects. After learning English language, it is essential to learn English grammar for getting confidence while speaking and performing in all walks of life.

Gender Equality

Gender distribution in the engineering profession continues to be dominated by males. This is evidenced in recent statistics in India where Engineers Australia identified the proportion of female engineers to be below 10%, which has been identified as *one of the lowest participation rates of women across all professions* [15].

However, female participation is increasing at a much greater rate when engineering is coupled with another discipline as part of a double degree [16]. The benefits of a double degree is that the student's skills base is augmented in other areas, including communication, as students are introduced to other subjects in tandem with the engineering degree. Further study would need to be undertaken to cover gender participation in double degrees, with the possibility that females may graduate with a greater range skills that would be more in line with industry demands.

Graduate Feedback

A report found that most graduates felt that they had gained analytical and problem-solving skills, subject-specific knowledge, research and improved decision-making abilities through their degrees. Yet despite this, much fewer felt that their graduate degree provided:

- Oral communication skills;
- Awareness of the social implications of their discipline's developments;
- Management skills;
- Understanding of other points of view and other cultures;
- Confidence and competence to work in inter-national environments [16].

Notably, oral communication skills were considered very important in the graduates' new work environments, but this was in the face of the low level of oral communication skills imparted during their studies. However, neglecting learning opportunities can engender a shallow level of understanding in the graduate if he/she does not see the broader picture. Communication skills teaching needs to go beyond the standard elements described above and incorporate reasoning