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## English Communication Skills for Engineers

*A. Srinivas*

*Mentor of English, Department of Humanities,  
Rajiv Gandhi University of Knowledge Technologies, IIIT Basar, Telangana, India*

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### CHAPTER-1

Engineering graduates require an ever-increasing range of skills to maintain relevance with the global environment of the new millennium. Communication skills are an vital component of this, recognised by academia and industry alike. English language skills are also important given its widespread status across the globe as a lingua franca. Indeed, multilingual skills are considered a salient element in the make-up of the new global engineer. English for specific purposes focuses the learner's attention on the particular terminology and communication skills required in the international professional field. Communication skills development is discussed in the book, with examples given of different methods of teaching and assessment. The impacts on communication skills development include various elements, including gender equality. A lack of sufficient communication skills serves only to undermine the image of the engineer, but this can be tackled by engaging features of emotional intelligence (EQ) in the education of engineers. EQ offers various components that can improve communication skills and emphasise a more experiential approach to learning.

Communication skills are essential for an engineer who aspires to carry out his/her professional practice in the global arena. Engineering communication skills basically constitute several core elements such as the fluency in the English language and the fundamentals of visual communication. Evidence indicates that communication skills are what helped Homo sapiens evolve beyond our related ancestors, and that these skills have helped humankind develop into the advanced societies on Earth today [1]. However, these skills have become stifled in the very discipline that has brought so many advancements, and that is engineering. There is ample evidence that graduate engineers lack the required standard of communication skills, particularly when compared to the needs of industry internationally [2][3]. This can also be determined when considering related disciplines offered at universities (eg business). This is so much so that the Dean of Engineering at Duke University stated that ...engineers who are adept at communications have a considerable advantage over those who are not [4]. Furthermore, this lack of communication skills only English and Communication Skills for the Global Engineer Marc J. Riemer UNESCO International Centre for Engineering Education (UICEE) Faculty of Engineering, Monash University, Clayton, Melbourne, VIC 3800, Australia Engineering graduates require an ever-increasing range of skills to maintain relevance with the global environment of the new millennium. Communication skills are an vital component of this, recognised by academia and industry alike. English language skills are also important given its widespread status across the globe as a lingua franca. Indeed, multilingual skills are considered a salient element in the make-up of the new global engineer. English for specific purposes focuses the learner's attention on the particular terminology and communication skills required in the international professional field. Communication skills development is discussed in the book,

with examples given of different methods of teaching and assessment. The impacts on communication skills development include various elements, including gender equality. A lack of sufficient communication skills serves only to undermine the image of the engineer, but this can be tackled by engaging features of emotional intelligence (EQ) in the education of engineers. EQ offers various components that can improve communication skills and emphasise a more experiential approach to learning. serves to undermine the whole profile of the professional engineer. Globalisation 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. A common code 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. H.P. 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]. This is reinforced in N. Grünwald's study of competencies required by the engineer of tomorrow, which includes hard skills like good foreign language skills. He goes further to claim that cross-disciplinary language skills are not sufficiently taught [3]. This indicates a lack of a direct fit between graduate skills and those required by industry.

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

English has become the ascendant language internationally, being the most widespread. This will influence the language of communication between professionals internationally. In this age of globalisation, the number of international projects is increasing, and cross-cultural communication and collaboration is on the rise; this is particularly so for the now international practice of engineering. English has been widely accepted as the most widespread language in the world [5]. It is the first language for many countries around the planet: from the United Kingdom and Ireland to the USA, from Canada to Australia and New Zealand, from Guyana to Jamaica, plus others. As a second language, it is also very widespread. For instance, now after the fall of communism, it has become the second language in countries in Central and Eastern Europe, and English is taught as part of multilingual education in India, South Africa, Singapore and others. The distinction here lies between the most widespread versus the most widely spoken. However, the number of people who speak English with at least some degree of proficiency exceeds any other language, and its phenomenal advance around this planet is unparalleled in the history of language [6]. This is particularly important for the engineering student, as this indicates that English will be of more use internationally than virtually any other language due to its spread. English is cited as the ...major language of international business, diplomacy, and science and the professions [5]. It is through this method that English appears to be spreading the most, compared to past centuries that were dominated by immigration and settlement, such as Canada, the USA and Australia. English is the prime means for communication, and can often serve as the global language between two people from two different cultures, wherein English is not the native tongue. For example, French engineers communicated with Egyptian engineers in English during the recent building of the Cairo subway [7].

Integrating relevant technical jargon and documentation in foreign language tuition courses in engineering is essential. The cultural history of prime English speaking nations, as well as the history of major engineering feats, can be used in the instruction of engineering students to maintain relevance. There are quite a few institutions in non-English speaking nations that offer in engineering courses in English, or at least subjects in English. These include the Technical University of Denmark, the Technical University of Lodz in Poland, the

Technical University of Budapest in Hungary, several German universities, plus other academic institutions in Europe, Asia, and other regions. These institutions are meeting the demands of industry internationally by contributing to the educational needs of the global engineer. University level education in emerging economies is set to see an increase in English-medium distance learning programmes that are supplied by western countries. This includes online education links being recently sought by Malaysia and Singapore. This is despite rumblings about the cultural impact of English on these two cultures. In a study on the future of the English language, Graddol found that English, Spanish and Mandarin would continue to rise as the dominant language blocs. This may well lead to an increasing level of language regionalisation where geographical areas become dominated by one language [8].

## CHAPTER-2

With experience of teaching English to young students in different colleges, so many problems of rural area engineering students have been observed. It highlights the importance of learning English as an key language of international business. It tells that English can be learnt by the students from rural areas by integrating different methods of language acquisition. Importance of English language English language is the current lingua franca of the international business, technology, aviation, diplomacy, banking computing medicines engineering and tourism. About one fifth of people all over the world know more or less about English. It is spoken by 1.8 billion people in the world and the number still increasing. Almost every single university in the world are conducting scientific studies in English. Total 60% of radio programs are broadcast in English, more than 70% of the content or address of mailing letters are written in English. English plays an important role in the world. Most people in the world agrees with what Alexander V. Sandoval claims in his essay, 'The Importance of English' on [www.eagleforum.com](http://www.eagleforum.com), "English is becoming the world's language of the 21st century. Most of the world's population, about 70% speak English or know it. And more than 80% of all stored information in the world is written in English or translated into it. Foreign language skills, and in particular the English are a good tool in work, school, on vacation, when building a career or promote your own business. The man who speaks fluent in English. Will not get lost in the world where there are people."

## II. IMPORTANCE OF ENGLISH COMMUNICATION FOR ENGINEERING STUDENTS

Engineering is the biggest field of study in the world. First of all English is a tool that significantly affect engineering students in academic life. While most of the theories in engineering are taught in English, it requires to have good English communication competence. In academic life, engineering students have to deal with the countless English lectures, tutorials, labs, project reports and books. Most engineering professors in various universities are also conducting lectures in English. The most convenient source of information i.e. Internet provides most of the information in English. During the job seeking process in interviews, GD's, it is but of crucial importance to achieve mastery in English proficiency. After securing the job they are required to work in groups since their task seldom be solved by an individual. So, being an engineer requires to cooperate and communicate with different people from different part of the world. English is used as the working language on large extent. In order to co-ordinate with the colleagues, engineers have to speak fluent English. So, English communication competence plays an important role in the academic life and career of engineering students.

## III. PROBLEMS FACED BY ENGINEERING STUDENT FROM THE RURAL AREAS

In our country, about 75% students of the engineering are from rural areas and most of them are coming through regional language medium schools. No doubt that as they have entered into the engineering colleges,

they do possess intelligence i.e. necessary qualification for higher education and bright future. But, at every walk of life and career English becomes an obstacle in their way of career. So, let us examine the reasons which make English as a souring grape for rural students even today in this modern era.

### **3.1. SOCIO ECONOMIC BACKGROUND OF FAMILY**

Classroom contains students from different strata of the society who possess different grasping power and English communication competence. It is found that the English communication competence of the students who's parents are literate belongs to higher middle class is better than that of the students whose parents are illiterate and belong to lower middle class. The fact for this situation is the literate parents can provide more exposure to their child to English as they are aware of the importance of English competence. They consult the teacher about child's progress and guide him/her at home to perform better. Infact it never happens with the second group as they lack parental supervision and guidance from to the higher education

### **3.2. LACK OF SKILLFUL TEACHERS**

The other important factor is the education system and lack of skillful teachers. Most of the teachers at all the learning levels are untrained they are unaware of the current trends and advanced techniques of English Language teaching (ELT). The condition is same with the regional medium as well as the English medium primary, secondary and higher secondary schools in rural or semi urban area. Again teaching –learning process is much exam result oriented. And the exams do test the memory power alone. Even the parents are craving for the marks than skills or knowledge. So, teachers make students to habituate by heart method, , as a result, English seems to be a dreadful demon for the students. This fright remains in the mind till higher education because of lack of proper guidance. Again these exam oriented students give prior importance to their technical subjects than to the communication competence.

### **3.3. EDUCATION SYSTEM**

The other important factor is the traditional education system which affects English language learning and acquisition. Basically it requires four skills i.e. Listening, Speaking, Reading and Writing. (LSRW). Our students are being trained in reading and writing for long ages and listening and speaking skills are neglected and ignored which are very important. Learning is the one basic skill which makes speaking possible. Learning language is possible only through active listening. As an illustration we can take an example of language acquisition by a baby. It starts speaking the words which it listens frequently. Our education neglects the importance of listening which results in lack of skill of speaking. Lack of modern and advanced technology in the process of language learning also affects the language acquisition. e. g. use of computers and internet, power point presentation, OHP etc.

### **3.4. CONTROVERSY UPON LEARNING GRAMMAR OF ENGLISH AS A SECOND LANGUAGE**

There is a much controversy upon learning English as a second language. Researchers ask a question that had we learnt grammar of our mother tongue when we learnt it. So, grammar is learnt only for the sake of getting marks and not as a tool for learning a language. Again the application of grammar in day to day life is being neglected.

### **LACK OF EXPOSURE TO THE ENGLISH COMMUNICATION**

The rural area students lacks the exposure to the English communication in the family, society as well as in the colleges. As a result of this even the merituos gold medalist fail to achieve success during personal

interviews due to lack of communication skills, soft skills, interpersonal skills and personality development. During academics also lack of confidence of being unable to communicate in English leads to feeling of inferiority complex, as a result students keep themselves lonely and isolated.

#### IV. REMEDIES

Knowing the importance and growing demand of English communication competence for engineering students from rural areas, there a need for the teachers as well the students to make integrated efforts. 1. Faculty is expected to fulfill their assigned responsibilities. But apart from that they should think it as their moral responsibility to take more efforts to provide more exposure to English language for students as to achieve communication competence. The students when forced to learn communication on their own, they find it as a herculean task. So, they expect assistance and warmth understanding from teachers. Now days a comprehensive course which focus on both writing and speaking skills is introduced in most of the universities in Maharashtra. So, during the interactive sessions the students should be encouraged and helped to talk. So, that the students can built an ability to participate in various activities such as book presentations, GD's, mock interviews, role plays etc. to develop English communication competence. It is necessary that Students Talk Time (STT) should be higher than Teacher Talk Time (TTT). 2. Students from the secondary and higher secondary level should be given dictionary of technical words with their meanings in regional language for use. The technical teachers should help students in understanding the technical words in English and their equivalents in regional languages. Again they should help the students to understand the meanings of long and complicated sentences in technical subjects. 3. Grammar should be taught in the form of application of it in day to day life. When we learnt first language, it requires a lot of time. We get a lot of exposure to it as all our communication deals takes place in the regional language. So, it is but natural that it does not require to learn the grammar of regional language. Unfortunately it does not happen with English which is a second language. From the experience, it is essential to learn grammar of English as second language for getting confidence of speaking and performing the best in all walks of life. 4. In this modern era, new trends and methods of teaching are emerging in the learning of the English language competence which involves the use of Computer assisted language learning (CALL) in the Language Labs. Most of the students are tired of the traditional way of teaching and are more interested in doing exercises on a computer than by hand. This system works more effectively when the ratio of computer and student is 1:1 CALL mostly includes: 4.1 Use of Audio /video clips. 4.2 Interlingual method-Listen and see clippings in regional language and English. 4.3 Language Learning-vocabulary-synonyms and antonyms. 4.4 Etymology reading. 4.5 Grammar. 4.6 Role plays-Speaking task. 4.7 Translation. 4.8 Fluency Task. By this method of learning students are provided a lot of practice and exposure to the English language. This method leads to individualization of learning, where teachers acts as mentor, trainer and aspirant to facilitate learning. The teachers should be aware of the latest technologies, explore new ideas and have certain amount of specialization in the subject. Refresher courses for these teachers at national level can help in achieving proficiency in use of CALL. 5. Students on their own should make use of English journals, television programs, newspapers, magazines, English language Resource centres to aquire the English communication skills.

English communication skills are recognised as the important element in the academic life and career of the engineering students. It requires to make use of integrated methods to facilitate advanced communication skills, which is the demand of industry as well as society. The rural area engineering students should effectively make use of the faculty, education system and the amenities provided to them in combination with

the self efforts, to emerge as a competent user of English communication to become successful in life and career.

The common language used by engineers to communicate their ideas, concepts and technologies in countries right across the world is English. English is the 'First Language' or the 'Working Language' all engineers need to be able to both use and understand. Having strong English communication skills in order to write technical reports, explain complex ideas and new technologies to people from non-technical backgrounds are considered to be essential skills that any engineer must possess. Possessing good English Language skills are an indispensable means of gaining knowledge about new technologies and understanding scientific principles. For engineers from non-English speaking countries right across the world, speaking or understanding English is no longer a luxury, but an absolute necessity. Therefore it is said that an engineer who is not fluent in English would in effect be a disadvantage to other professionals. It is important therefore, that not only your use of English is not only good but that it should be grammatically correct and most importantly, that words are spelt correctly, When conducting research and providing written descriptions for your PEO, your use of English will be periodically checked and where necessary, corrected. This is purely to help you improve your use of English for the reasons explained. Spelling words correctly when using English can be quite challenging. Many people have problems with spelling correctly. One of the main reasons for this is that many English words are NOT spelled as they are spoken. This difference between pronunciation and spelling causes a lot of confusion. There are some tricky English words, like necessary, whose spelling you simply just have to learn. But plenty of others do follow special rules. There are many websites that can guide you with these – for example, try the following website: [http:// www. oxforddictionaries. com/words/spelling-rules-and-tips](http://www.oxforddictionaries.com/words/spelling-rules-and-tips) Test yourself by correcting the short passage of text below;- Soldering is defined as "the joining of metals by a fusion of alloys which have relatively low melting points". In other words you use a metal that has a low melting point to adhere the surfaces to be soldered together. Soldering is rather like glueing with molten metal, unlike welding where the base metals are actually melted and combined. Soldering is also a 'must have skill' when carrying out electronics work, it is also a skill that must be taught correctly and developed with practice. It is easy to make mistakes when soldering, getting the solder to hot, not cleaning the joint before soldering and not forming the component leads correctly being some of the most common examples. It is important that your competence is perfected before you start assembling circuits, there are many ways in which you can achieve.

As an Engineer working for an international company or hoping to, you may find yourself spending a great deal of time trying to improve your English skills, only to continue to have trouble understanding the conventions of the English language.

You may have watched countless videos, studied grammar books and study aids and even spent money on courses promising better English in a short amount of time.

The truth of the matter is, that if you continue to follow the steps that you have been taking, you are not going to achieve your goal. Countless distractions - trying one thing after another will hinder your progress, slow you down and demotivate you, before you ever reach the level of proficiency in English that you want.

Instead of continuing to try and learn everything, you need to focus on what you need, in order to improve your job performance and secure future job opportunities. Focus on those needs that are specifically required for Engineers like yourself.

Consider this, you discover that your vitamin D levels are low and you need to fix it. What would you do? Would you opt for a concentrated vitamin D supplement or a multi-vitamin? If you decide on a multi-vitamin, because you conclude all vitamins are good, your vitamin D levels will not improve significantly enough, because you have not focused on solving the real issue. This seems obvious, but it is the same with your English learning journey.

You may have tried to learn everything you can about the English language, but really you only need to focus on learning the English you need to improve your job prospects and career opportunities.

In order to improve your English so that you can achieve those goals of improved future career advancement you need to follow 3 steps.

### **STEP ONE: Build Your Business Vocabulary.**

This is necessary so that you begin to understand the business culture in the Western World.

You can do this by creating your own dictionary of business vocabulary. This includes different expressions and phrases used. Joint down every new English word you come across with its definition, so that you know what it means. Soon you will have your own glossary of words that you can practice.

### **STEP TWO: Improve Your Communication Efficacy**

This is a fundamental key to success. No more inadequate feelings at meetings because you don't know how to express yourself and no more feelings of embarrassment when talking to colleagues or clients because they don't understand you when you speak English.

To achieve communication efficacy focus on the sounds of words and the way the voice rises and falls when speaking. Practice making 'small talk', simple conversations in different scenarios that you find yourself in at work and practice.

### **STEP THREE: Enhance Business Writing Skills**

In this technological, fast paced world, you are going to have to express yourself not only by speaking but also in the written form, so this step is very important.

To do this, learn the professional format and the principles to write business emails and practice.

These 3 Steps will enable you to successfully achieve your goal of improving your communication skills in English, specifically within the business world.

Knowing the culture, expressions and phraseology used within business will enable you to better understand the fundamentals of business.

Improved and effective communication will enable you to contribute and participate in business meetings with confidence and surety.

The ability to express yourself professionally on book in the form of emails, memos and letters etc is imperative to the world of business.

Mastering these steps will ensure English communication skills success in business.

Feel free to send me a message if you would like to learn how I can help you improve your job performance and future career opportunities by advancing your English communication skills.

**CHAPTER-3**

Industry 4.0 emphasises the role of the Internet of Things, drones, Big data, and advanced research in various fields with a vision to transform society. The focus is on better automated AI machines capable of communicating amongst themselves. It also has a vision of reducing human interventions with humanised and empathetic robots to make life simpler and more convenient. Nevertheless, for all these things to happen, the experts believe that intra and interpersonal communication skills will be crucial. As Gaulia mentions, companies prefer hiring professionals with a passion for adapting to meet challenges, a sound emotional intelligence quotient to handle conflicts and foresee and solve problems creatively (2018). The existing literature about the impact of technology on jobs and skills reflects a newfound preference for communication competence which is impossible, at least in the near future, to be replaced by machines. Nagarkar says that the focus in the coming years will be on recruiting professionals with higher order skills (2020). These skills include the capacity to adapt, perseverance, team spirit, emotional intelligence and interpersonal competence. As AI today is replacing human intervention faster than ever, organisations will require more ethical and inclusive leaders. With ever increasing automation, it is imperative that technology complements human skills that require careful human intervention. Since technology is changing and evolving rapidly, it puts a great emphasis on having such leaders in organisations who can take tough decisions with ethical and social implications. The responsibility of using such advanced tools ultimately falls on human resources. Intricate interactions between humans and artificial intelligence will be the hallmarks of Industry 4.0. The situation calls for an in-depth understanding of managerial functions suited to meet the requirements of highly advanced workplaces. Foutty mentions that such workplaces can only be handled by professionals having impeccable interpersonal competence (2019). Therefore with the advent of 4.0, the qualities such as creativity, empathetic listening, openness to experience, persuasiveness, and emotional intelligence will be more significant than ever. As per a survey conducted by Deloitte Global, the most desired traits for becoming a successful professional are communication competence, confidence/motivation, ethics/integrity, and critical thinking (2019). In India, apart from hundreds of dialects, there are over 22 official spoken languages. This makes India one of the most linguistically diverse countries. People use English as either their second or third language. This scenario makes learning fluent English difficult as the learners often speak their native language outside the classrooms/formal situations. Learners are only occasionally forced to communicate solely in English.

Especially in rural areas, teaching and learning English is problematic because of the lack of exposure and opportunities to learn English. This lack of exposure leads to great hesitation among students regarding using the English language, even at the graduate level. According to P'Rayan & Shetty, Indian students show discomfort while speaking English and display high levels of Communication Apprehension (2008). As noted by Gordon, such tendencies are common among English speakers who are not native English speakers (Cited in Hart-Rawung and Li, 2008). Since English is used in most educational institutions for instruction purposes and is also considered lingua franca across the globe, it significantly affects the communication competence of a student. The importance of the English language is very well established in a survey conducted by Blom & Saeki, according to which English communication skills lead to an increase in the hourly wages of engineers by 34 per cent (2011). As Marina & Rajprasad (2014) noted, most nations in Asia consider communication competence as one of the most essential selection parameters. Mehra & Virgandham (2013) study the significance of communicative English, which includes listening, speaking, reading and writing skills vis-à-vis employability of Engineers in India. An employability report in 2016 finds that only 17.91% of engineers were employable in the software services sector in India (2016). About 3.67% were worthy of getting hired



for software products, while 40.57% were fit for other jobs like BPOs. Competence in English communication was one of the significant parameters used for deciding employability. Blom & Saeki (2010) say that some recruiters consider communication competence to be greater in importance than professional skills. Therefore the recruitment of individuals lacking in communication skills becomes challenging. Even those companies which provide post-recruitment training to professionals report that around 52.21% of engineers fail in soft skills training. Puranik (2015) says that poor communicative competence adds to the total number of unemployed engineers as such individuals are unwilling to accept jobs which do not match their qualifications. There are numerous studies that have studied the importance of the English language for engineers (Gimenez, 2014). According to Huckin & Oslen (1991), as most of the work in various engineering fields is primarily interdependent, the need to have good communication skills to work in coordination is as critical as having technical skills and creativity. Fisher (1998) notes that a survey conducted on 1,000 employers in the USA found that 96% of executives consider effective communication skills crucial for succeeding professionally. Similarly, in a report published by Wall Street Journal (2002), Leadership and communication skills were found to be the most in demand and necessary to stand out from the competition. In India, English is not usually spoken in day to day life. As Hart-Rawang & Li (2008) note, a lack of communication skills leads to linguistic anxiety in different situations. It has been observed by Tahaineh (2010) that the problems related to learning and using a second language negatively affect other cognitive and linguistic skills. As a result, the students, despite their willingness and ability to learn various concepts, lag behind. NBA (2022) emphasises that apart from specific technical skills, an engineering graduate must also be able to work in a team, have intercultural sensitivity and intelligence and display adequate communicative competence. Similarly, ABET (2022) also emphasises the need for communication competence for engineers. Craig (2008) notes that the nontechnical skills that engineers are expected to be skilled in include teamwork skills, written and oral communication skills, presentation and selling skills, understanding of economics, business and travel etiquette, managing without authority, and leadership with a global view. Since communication competence goes beyond having command over the language, the students need the training to learn to analyse various engineering concepts while using their domain knowledge and expertise in other fields.

2. Teaching English as a Second Language in India Thompson & Wyatt (1952) noted that teaching English in India started primarily to equip students with the ability to understand, speak, read and write English. The importance of learning a language with a utilitarian purpose in focus, thus, was understood decades ago, which rendered learning grammar rules and studying literary texts for learning a language less effective. This further led to the use and popularity of Communicative Language Teaching (CLT) across the world for teaching/learning the English language. The popularity of CLT, due to its effectiveness, grew around the 1970s. According to Richards (1986) CLT is now considered by the Americans and the British as a method to treat communication skills as the desired outcome of teaching English and thus devise strategies to teach language to show the inherent relationship between language and communicative competence. The credit for introducing and propagating the CLT approach goes to Dell Hymes and Michael Halliday. According to them, the primary function of the language was to communicate (1973). This change in pedagogy also led to the use of the term 'communicative competence', which translates into one's capability to communicate using correct language in the second language. Stephen Krashen (1982), a linguist, proposed that learning a new language is possible by using that language communicatively. According to Krashen (1982), through this approach, the learner acquires the language subconsciously, comparable to a child acquiring his first language subconsciously. This method also speaks against over-dependence on learning grammar rules for language acquisition. The CLT approach to teaching English is based on the theory of language as communication. It upholds the importance of grammar and vocabulary but shifts our focus to

understanding and learning how people use language to communicate with each other. Verbal fluency is given preference over accuracy in using grammar rules. Therefore a standard CLT classroom creates situations that simulate life and makes the learners play their parts accordingly. Role plays during such activities encourage participation and help learners achieve communicative competence. In India, the changes in English syllabus were introduced in the 1980s. However, it is unfortunate that many educational institutes, especially at the elementary and higher secondary level, still teach grammar rules and literary texts to teach communicative English. Making students job ready is one of the major learning objectives of professional communication courses, however, the gap between graduates' job preparedness and recruiters' expectations often makes researchers worldwide question the effectiveness of educational institutions for the same (Bauer-Wolf, 2018; Campbell & Kresyman, 2015; Hart Research Associates, 2015). Studies have noted a gap between the preparedness perceptions of graduates and employers (Mourshed, Farrell, & Barton, 2016). This gap also creates misalignment between students' and employers' priorities for communication skill development (Ulinski & O'Callaghan, 2002; Hanover Research, 2016). Due to differences in jobs, role expectations and culture in different organisations (Briggs, 2007, Candy & Crebert, 1991; Moore & Morton, 2017), it is challenging for the educational institutes also to identify and hence teach/inculcate specific communication skills relevant to the industry needs in their respective courses (Moore & Morton, 2017). The difficulty of bridging the gap between academics and practical workplace needs is a common problem (Moore & Morton, 2017). The recruiters expect the interns/new recruits to be prepared with the basic communication competence as these skills are expected to be easily inculcated in the students during their studies (American Management Association, 2012). Although the stakeholders agree over the importance of communication competence for employment, however, there needs to be more of a consensus regarding the specific skills that should be taught to the students to inculcate this competence (Lucas & Rawlins, 2015). The need to integrate communication competence across the disciplines have been emphasised by the researchers (Kerby & Romine, 2009), however, educational institutes under Indian educational system teach communication skills as a dedicated course only (Conrad & Newberry, 2012; Moshiri & Cardon, 2014). The present study is a proposal for a course on Professional Communication for engineers, with a view to address the challenges faced by the instructors and the students of professional communication.

3. Professional Communication/Communication Skills Teaching in India: Existing Teaching Framework In India, English is a compulsory subject in schools. A closer look at the curriculum, however, reveals that the focus is more on written aspects of the language, as a significant portion of the evaluation is dependent on written tests. The students who aspire to become engineers focus mainly on subjects other than English, as engineering entrance examinations do not have any section that tests the English language. Hence English as a subject hardly receives any attention from the students, especially at 10+1 and 10+2 levels. According to the Hindu (2015), 70 % of the Indian population lives in villages. They lack exposure to practical and functional English, which further adds to communicative incompetence in them. In order to study the problems encountered by the teachers and learners in communication skills courses, the present research has considered the curriculum of most engineering institutions in India. The courses related to English communication are usually offered in the first year of their degree and are compulsory for all students. Such course aims to improve their writing, speaking and listening skills and introduce them to various communicative situations to make them job/industry ready. Some institutions have courses specially designed for students weak in English, which focus on teaching grammar to such students. The course is covered in Lectures, Tutorials and Labs. The lectures cover the basic concepts related to various aspects of communication. The focus during the lecture classes is usually on imparting knowledge about models of communication, barriers that hinder the process and correct feedback which is crucial in improving interpersonal communication. Significant importance is

given to teaching written communication concepts involving official documents, reports, résumé and letters. Lecture classes also provide theoretical knowledge regarding the role and importance of body language in interpersonal communication. Brief instructions relating to the activities to be done in the Tutorials/Labs are also provided during lecture classes. The tutorial classes mainly focus on making students practice various activities related to interpersonal skills. The activities such as making and delivering PowerPoint presentations, participating in group discussions, Role Play, Interview Techniques, and handling stage fright are parts of tutorials. It is expected that students improve their oral communication skills and body language by participating in these activities. The other activities completed during the tutorials involve making students practice writing technical documents taught during lectures. Due to financial constraints, Language labs are not a part of communication skills courses in all the engineering institutions in India. The Institutions with Language labs focus on making students learn the concepts related to written communication, grammar and phonetics. The teacher's involvement in the labs is minimal as students learn themselves with the help of the software/computer.

4. The Problems and Proposed Teaching Framework As mentioned earlier, the course that is aimed at improving the overall communication skills of students is mostly taught for one semester only. Students from diverse backgrounds find it challenging to understand and assimilate the skill set taught in a short period of one semester. Reflective and analytical skills such as creativity, leadership, decision making, teamwork, and critical thinking, which are essential interpersonal skills crucial for success in the competitive world, are hardly touched upon. Such skills can only be taught to the students after they have overcome their initial inhibitions regarding speaking and stage fright. It is proposed that the courses related to professional communication should be a part of the curriculum in the second and third years of the engineering degree. Initially, the emphasis needs to be put on improving speaking skills, handling stage fright and improving body language. In the second and third years, the focus should be on developing reflective and analytical skills. Engineering institutions have standard evaluation procedures where students are evaluated on the basis of their performance in written examinations, tutorials and labs. Written examinations have the maximum weightage i.e. 65-70%, and tutorial activities are given only 30-35 % of the total weightage. As the students realise that their success in a particular course is going to be evaluated on the basis of their performance in the written examination, their motivation to participate in tutorial classes is greatly affected. Since Indian students already show significant linguistic anxiety, the weaker students try to avoid participating in tutorial activities that deal with oral communication skills. Freisinger (1982), reports that due to such an evaluation pattern, the English language in India has become merely a tool for reporting and reproducing information mindlessly during written examinations. He further (1982) adds that rather than focusing on making the English language a Transactional language, it should be developed as the language of expression. For this purpose, it is proposed that the evaluation scheme should be modified and the practical activities in professional skills courses should be given more weightage than written examinations.

Lectures: The course on communication skills/professional communication should be designed in a way that it encompasses all the aspects of interpersonal communication at workplace. The course may begin with the basic concepts of effective interpersonal communication. The course module dealing with listening skills should emphasise the role and importance of empathetic listening in leadership communication. Non-verbal communication is a crucial part of professional communication and should be given due emphasis. Technical writing skills, effective presentation skills and introduction to intercultural communication are other modules that should be included in the course. The course should be designed keeping in mind the specific workplace needs of engineering students as and when they start working as professionals. Course Learning Objectives (CLOs) help establish desired results from a course and assist in selection of suitable teaching-learning methods, instructional activities and evaluation scheme (Bedwell, L, W; Fiore, M. S; Salas, E., 2014). At the beginning of the course

as well as while beginning each module, if students are made aware of the CLOs, it helps students understand the significance of the particular module. Students also know about the evaluation pattern and respective amount of hard work needed to master a particular skill. Students feel more connected to a course/topic, when they know the significance of the skills learned during a course in their future roles. Lecture classes should be carefully divided in a way that only a part of it is dedicated to teaching and the other significant half for discussion of the concepts taught. Discussions facilitate checking/ensuring students' participation during the classes. 3-5 minutes online/offline quizzes help break monotony during theory classes and also help students assess their understanding of the concepts. While teaching written communication such as writing letters, memos, resume, or any other technical document related to official correspondence, the basic instructions should be followed by the practice sessions for the same. The students may be provided with the templates (soft/hard copy) for the same which they may complete/attempt during the lecture classes itself. This helps students practice writing as well as clarify their doubts regarding the same. Similarly, while teaching the basic principles of technical writing, the exercises such as filling in the blanks with suitable words/phrases, completing the sentences, spotting the error, etc., should be given to the students as classroom exercises. Such exercises make students practice the concepts while they are still fresh in their memory. Public speaking practice activities (introduced in tutorial classes) should also be attempted during the lecture classes, as these activities help students handle speaking anxiety with practice gradually. In the beginning of this activity, volunteers should be invited to practice, as forcing unwilling/nervous students for such activities in the beginning may have detrimental impact upon their overall confidence. Students who need more confidence for public speaking activities may gradually be encouraged to attempt prepared speeches. Such students may also be encouraged to record their speeches privately which they can share with their instructor for feedback. After they are able to overcome their speech anxiety/nervousness, they may be encouraged to perform in front of the class. Tutorials and Labs: The tutorials should include various experiential/practical exercises that hone their oral communication skills. These exercises may include activities related to telephone etiquette, handling difficult conversations, interviewing a famous personality, self-introduction, and so on. It is suggested that group activities are introduced at the beginning of the course. Group activities help students handle their nervousness and confidence issues as the focus during such activities is on the group rather than the individual. The oral presentations should be aimed at improving confidence, pronunciation and body language of the students. The activities related to public speaking (two to three minutes speech) should be introduced and rehearsed during tutorial classes (smaller groups). The activity should be performed in front of larger groups in lecture classes only after considerable practice sessions in tutorials. Such activities in tutorials help students overcome stage fright as students feel more comfortable in front of smaller peer groups. As they gradually gain confidence by practising, getting feedback and observing other students go through the same process, they become more prepared to speak in front of larger and unfamiliar groups. The activities such as group discussions and panel discussions should be introduced in the first semester/year; however, the students should be evaluated for such activities in their second semester/year only when they are trained and confident enough to participate and perform effectively.

Giving constructive feedback using the right tone is of extreme importance during such a course. Feedback may be defined as a “dynamic and co-constructive interaction in the context of a safe and mutually respectful relationship for the purpose of challenging a learner’s (and educator’s) ways of thinking, acting or being to support growth” (Ajjawi R, Regehr G, 2019). Considering the problems related to speaking English amongst Indian/Asian students, it becomes important that students are provided feedback in a way that students learn interpersonal skills without developing any feeling of inferiority. Oral feedback should be accompanied by the

written one so that students may work on the suggestions given by the instructor outside of the classroom as well. It has been reported that peer feedback helps improve domain specific skills (van Zundert & Merriënboer, 2010). Peer feedback is important in making (i) students internalise the importance of various evaluation/performance parameters as they have to judge students on those basis (Lundstrom and Baker, 2009, Lee, 2015, Huisman et al., 2018) and (ii), it also makes them more accepting to the feedback if there is a parallel between the feedback by the students and the instructor (Falchikov & Goldfinch, 2000). Thus introducing peer feedback during tutorial activities will increase students' participation and understanding as well. The instructor should play an active role in helping students understand and participate in peer feedback system. The students should be recorded during their presentations in the classes with an aim to providing them with specific feedback regarding their performance/participation later on. Weaker students/students low on confidence may be given feedback privately to eliminate the chances of them feeling inferior. The lab component should be introduced for the students needing help understanding basic concepts related to grammar and pronunciation. The involvement of the teacher is minimal in lab classes and the students may pick up from any level (beginner to advanced) suitable to their needs. The teacher's presence, however, is mandatory as students may need assistance or clarification regarding the lab work.

When students enter higher education institutions, the onus of training them in various professional communication skills comes upon professional communication teachers. The students are expected to learn and perform various concepts and activities related to professional communication skills in one semester that effectively spans 4-5 months. As a standard professional communication/communication skills course has elements related to written and spoken communication, it becomes a herculean task for most students to master many skills in one semester. The communicative competence of students in Communication Skills courses is assessed through the written examination. Oral communication assessment components, although present, are not adequate. It is thus required to focus more on the oral communication skills of Indian students as they face more problems while speaking. The basic concepts related to social and psychological aspects of communication should be taught in the first semester/year. Principles of technical written communication should also be introduced at this time in the lecture classes. The students should be imparted the theoretical knowledge during lectures and made to practice the same during tutorial classes. The role of teachers is crucial during tutorial classes as students need constant feedback regarding their writing style and accuracy. The course related to technical report writing should be introduced as a separate module in the second year. As report writing is an essential component of other engineering courses, the students need to have a deeper knowledge of report writing as per their needs. It is proposed that the faculty from all engineering disciplines should be involved while deciding the syllabus and evaluation scheme for the course so that it could be taught as per the specific needs of the engineers. The courses related to concepts such as intercultural sensitivity and intelligence, intellectual property rights, sustainable development, and ethics not only help students develop specific skills related to the respective field, they also prepare students to work in diverse and challenging environments at home and abroad. Such courses should be introduced in the third year of their degree. While evaluating these courses, the focus should be more on projects and individual and group participations.

The Professional Communication/Communication Skills courses should be integrated with core engineering disciplines. It could be achieved only with the active participation of the faculty from these disciplines. Engineering faculty usually hesitate in grading/commenting on the students' communication skills due to their perceived lack of expertise in the field. Also, while teaching the core subjects, teachers consider focusing on communication skills an added burden. Communication/Professional Skills are considered the sole responsibility of the faculty from the Humanities Department. Nevertheless, the faculty from engineering

disciplines should actively coordinate with Humanities teachers during the activities such as Mock interviews, report writing and evaluation to better understand the needs and challenges of engineering students. Communication skills teachers may evaluate subject specific seminars in collaboration with subject specific faculty. Faculty teaching tutorial classes should be adequately trained to understand and handle the needs and problems of students in dealing with linguistic anxiety. According to Kitao (2015), changing industry requires an engineer to cross sociocultural boundaries effectively. It is the need of the hour that educational institutions make necessary changes in their curriculum, as the role of such institutions will be significant in meeting the industry's specific requirements.

#### CHAPTER-4

Teaching and Learning Technical English for Engineers is an imperative aspect for employability where linguistic skills are honed to excel in ones career along with technical subjects. Technical English is the ability to use the sub skills of language including listening to the sounds, speak in acceptable grammar structure, reading with right intonation and pronunciation, writing with logical thinking along with a wide range of vocabulary words makes a learner industry ready and could make a successful career. This book would emphasize the need of sub skills at technical level and its importance in campus placements where the linguistic skills are tested in the form of group discussion or oral presentations and its practices towards learning Technical English.

Communicating with others is an essential skill to escalate in a corporate world. Effective communication is all about the conveying style either in spoken or written format would matter for a great career. Stern (1983) says that 'language competence or proficiency is characterized by four features: formal mastery, semantic mastery, communicative capacity and creativity.' (p. 399) he further expands 'the four characteristics of language proficiency are best assumed to develop simultaneously throughout the learning process as the language learning process lasts a long time, the learner may choose to enter into a new language, through an emphasis on any one or more than one of the four aspects of language proficiency and in the course of time the emphasis may shift'. (p400) English is considered as an international language as it is widely spoken language of the world. English language enjoys the status of lingua franca and has been widely accepted as the most widespread language in the world. By the end of 20th century English began to emerge as a global language. English has a great acceptance at socioeconomical, political and industrial levels. English is cited as the major language of international business, diplomacy, science & Technology and IT enabled professions, the outlook behind the usage of English has been changing significantly accordingly. In India, there is a paradigm shift towards the learning of English language not yet complete in a whole efficient and the need of higher level of proficiency is needed. Need of communication skills for engineering students: To express and share their experience, → knowledge, ideas, and thoughts in an effective manner for the common benefit of the society. To excel in academic /professional career. → To harness a better comprehension in→ working To pursue higher education→ To work in a globalised and multilingual→ culture. To experience as a whole in writing, → negotiate, intrapersonal skills etc For social status→ Engineers are highly skilled, knowledgeable creative workforce and yet fail in communicating their expertise in their profession. English language often proves to be a fatal and futile experience by while the potential engineers and experts of the industry fail in writing, publishing, participating in conferences among their peer professionals. This brings a great fall in the ones career and one should refine their English skills of their profession to be a complete professional. The Technical English for Engineers syllabus should focus mainly on the communication skills to function effectively with the people, by the people and to the people Principle strictly so that the language would work

in all shades of the subject concern. The American Society for engineering education conducted a survey to determine the industry needs and results show communication skills rank above any other type of skill, capturing five of the most needed skills, out of thirty-eight skills analyzed. The five communication skills are as below: 1. Technical writing (2nd position) 2. Public speaking (4th position) 3. Working with individuals (6th position) 4. Working with groups (7th position) and 5. Talking with people (9th position) Nicholas D. Sylvester in his book *Engineering Education* has given data under the title “Engineering Education must improve the communication skills of its Graduates.” From the data, it is observed: “75% of engineering undergraduates take jobs in industry, where at least 25% of an engineer’s time is spent in the reporting process. As the engineer moves to higher position in his profession, this time could increase to as much as 80%.” Writers of scientific and technical writing should produce sentences that readers can easily understand, and they should place those statements in contexts, paragraphs or larger units. Hence people of technical fields are expected to study significant amount of both oral and written work and learn to communicate in a variety of forms, especially shorter forms using technical terms for non-specialists helping non-technical people understand technical terminology in ease. Writers could present in intelligent way if the terms are easy to comprehend. For Example: The full meaning of a term can often be expressed by simply ‘unwinding’ it from right to left and inserting the appropriate preposition. Like in the term – “wall stress” could be explained as “stress on a wall”, “stress inside a wall”, “stress produced by a wall”, etc. only the Civil Engineering Department personnel can be sure that “stress inside a wall” is exact meaning. The correct interpretation of the term depends heavily on the reader’s prior knowledge of the subject being discussed the non-specialists would be able to guess the intended meaning of the compound term as a whole. Definition of Simplified Technical English: “Writing English documentation for the Aerospace industry, where numerous restrictions such as limiting the Number of nouns in a row and the overall length of a sentence using a dictionary of approved and disapproved terms and words”. English in Technical usage is simplified according to their specifications with accepted and modified up to the specifications. Engineer has two rather distinct meaning, one which is close to ‘technician’ or a ‘mechanic’ and it is rather difficult to decide what English to teach to engineers. Technical writing – A promising career: Technical writing is a form of communication, a style of formal writing used in fields as diverse as computer hardware, software, chemistry, Aerospace industry, Robotics, finance, consumer electronics and bio-technology. Technical writing is communication written for and about business and industry. Technical writers explain technology and its-related ideas to technical and non-technical audiences. Technical writing department is often known as information.

development user assistance, technical documentation or technical publications. Technical writing focuses on products and services – how to manufacture them, market them, manage them, deliver them, and use them. Technical writing is composed of a group of people working in different levels of office organization including sub-ordinates, vendors and customers. A technical writer expects to write Memos and Electronic Mails, Letters, Reports, Proposals, Brochures, Newsletters, fliers, resumes, websites, online help screens, and technical descriptions. A technical writer’s goal is to create text that is clear, concise, easy to understand and easy to navigate. Engineering or a graduate with good communication skill in English language would lead a promising career in the field of Information Technology. Hence linguistic skills of a language is not only a subject of score but could also be considered as skills for success. For Example A photocopier repair Engineer and another which is close to ‘Designer’. The need of these two groups is likely to be different, but there are also people whose jobs and training fall somewhere in the intersection of the others. Another complication is that English for engineers is also often meant for people working in full-time education, where the future job potentiality is unknown specifically as the syllabus of few subjects are interdisciplinary in first year later

leading to a specialization of numerous different kinds of engineers like marine engineer, architectural engineer, genetic engineer etc., with widely different fields of work and specialist vocabulary. Hence a specific cut short of English subject could not be designed for any position, yet minimum sub skills of English are trained like productive skills – professional skills in writing, speaking and Receptive skills to comprehend the reading material from a script, listening to a client or people working together. This leads engineers tend to be interested in technical topics even if they have little relation to their own specialization and technical topics also brings up a language that can be used to describe other kinds of engineering Skills.

This book concludes with a good note that engineering students should learn by practicing the entire sub skills of language in an application based either by listening to audio files, reporting or presentations, writing through plans, procedures and presenting by seminars would develop the linguistic skills of a language learner. All the sub skills of English language can be interpreted in an integrated form by using creativity, innovative and thinking logical, lateral and critically. This is purely practice based skill where the mastery of a language would solely depend on theory and skill practice in any field of the profession.

## CHAPTER-5

Engineering graduates require an ever- increasing range of skills to maintain the balance between the global environment and the new millennium and communication skills are a major component of this serenity. The competence of English language plays a significant role in Engineering students' academic life and Professional career. We cannot deny that the ability to speak, read and write in English affects research, collaborations, instructions and thus the overall success of an engineer.

The importance of English language competence in every sphere of the professional life of an engineer for his successful future insisting that the engineering students should focus on English learning and be fluent with English communication skills is discussed here:

### **To become Global Engineers**

– Globalization has directly affected the industrial demands and a global engineer must be able to easily cross national and cultural boundaries. Effective communication skills are the basic requirement for engineers who aspire to carry out their professional practice in the global arena. English being the predominant language serves the purpose of communication for exchanging ideas and thoughts, therefore stand outs as a medium to connect world through technology.

### **A language of confidence**

– English has become one of the most promising language in terms of professional communication. In this era of globalization where the number of international projects are increasing and cross-cultural communications and collaborations are on its rise a personality which stands out with confidence is a must. A command over your language enhances the communication skills and boosts your confidence which outshines your personality.

### **A language of presentable world.**

– In the golden era of development engineers have to maintain themselves according to the current scenario. Today's world demand ideas not on books but through presentations. Efficient communication skills and fluency in speech are the basic requirements to give an effective presentation. The one having a command



over his language will always outshine among the rest. Thereby, this makes learning English even more important for engineering aspirants.

### **A language of ideas**

– It is rightly said that communicating ideas is the first step towards progress. A correct language gives your ideas the right shape and leads them towards reality. In this era of technology when English is the predominant language for communication one needs to hold a control over the language to communicate their ideas and thoughts throughout the globe. As they say a sharp tongue always makes you shine brighter than the rest.

It is rightly said that our language is the limit to our world. Learning the efficiency to read write and speak English connects you to the global world. As aspiring engineers let your ideas flow breaking the barriers of language and shine in the world of technologies with **Dronacharya Group of Institutions, Greater Noida**.

In a world which is characterized by technological aids and digital tools, the knowledge of English speaking plays a pivotal role. Every individual needs to communicate in some vernacular language of their choice to keep the ball rolling. Nonetheless, people require a universal language to meet the demands of global market and stand the challenges of the digital world. To fulfill this goal, speaking in common language like English is the need of the hour. The students in specific should open their eyes and examine the truth that speaking in English is the rudimentary aspect of their career growth. Be it an undergraduate, post graduate or professional course, every student must learn the art of speaking in English. A professional course like engineering demands much more of a student worthy of workplace competencies. From the perspective of placements and employment, communicating in English for engineering students is mandatory because MNC'S look for professional who are well versed and proficient in English communication. The addition of communication skills into the curriculum in all the engineering courses is done with the intention of improving the performance of budding engineers in all spheres of life. The focus on the syllabus is on the enhancement of four language skill- listening, speaking, reading and writing, but the key skill which is highlighted in engineering is speaking because through speaking engineering students can scale great heights and climb the ladder of success. So the article emphasizes the necessity for speaking in English for professionals to empower them. The high powered society where engineers intervene challenges them in all aspects as the society marches towards the 21st Century. Engineers engrossed in the execution of projects and processes, depending on the chosen field of study, rely on their speaking abilities. Speaking in the native/local tongue or language cannot fulfill the requirements of an engineering student and shower them success.

But learning to communicate in common language is the need of the hour. Hence mastering second /foreign language such as English is of prime significance. The second language acquisition is a herculean task that requires many skills such as reading, listening, writing, speaking, grammar, and vocabulary. It is stated by a number of researchers that English is easy because we listen to English music, watch Hollywood movies and do other tasks pertaining to English. But when it comes to speaking, it is very different. Engineers placed in a multifaceted environment must gain an understanding of all aspects of the industry. There is an obligation to instill in the striving engineers extensive knowledge of speaking skills along with the technical knowledge. Workplace Communication Workplace or the business world is seen as a bridge to reach out globally. As such, communication skills are placed at a higher scale by prospective employers in their pursuit for engineers. The traditional way of communicating has been the foundation of all ages, but now, engineers must learn to cope with the latest challenges of communication and maintaining a good job because of the heavy competition in the job industry. Young engineers are scared to express their ideas, opinions and abstain

themselves from speaking due to language barriers. There are chances of long standing problems in the competitive world of engineering if the candidates are not capable of communicating even in the simplest English. Thus, being one of the essential elements of communication skills, preparing students with the necessary skills to speak effectively is crucial. Many engineering students lack proficiency in speaking. Furthermore, according to Nunan (1998): "The desirable skills and attributes for engineers include the ability to communicate effectively, both verbally and in writing, to peers, the employers, client and the community; engineers should be bilingual" (p. 73). The twenty first century is an epoch of swift changes. The urge to learn new things and acquire speaking skills will make the engineering students confident and give them a niche in the job market. So the channel of transmitting ideas for students takes place only through the speaking mode. The workplace or the business world is seen as a connection to reach out globally. So naturally engineers are expected, to aim higher and grope beyond their normal capacity to meet the demands of modernization and technology. As such, speaking skills are placed at a higher scale by prospective employers in their pursuit for engineers. Engineers must learn to use English by balancing with both the traditional way of speaking and implement the latest trends in technology. So one of the essential elements of communication particularly for engineering students is speaking skills to make them industry ready, 'fit for job and fit for life'. The emphasis is put on students' fluency in communicating rather than on the accuracy of language which encourage students to be involved in the communication process. The intention is not just equipping students with technical skills, but the researchers believe that engineering students should be brought to light about human-related skills. This is where workplace communication will play an essential role in serving engineering students to build their inter-personal skills, which will undoubtedly be helpful in the future. Engineers need to build affinities with all types of people. They need to learn how to demonstrate interests in getting to know other people. While exchanging ideas, engineers need to understand people who have different attitudes and perspectives due to their diverse backgrounds. Without good communication in their respective workplaces, chances are more for engineers to misunderstand wrong ideas that may be communicated and the overall peace of mind may be spoilt. Speaking Skills for Professional Development Competence Speaking skills are obtained in order to interact with others. In a research conducted by Ferris & Tagg (1996) at various institutions and across academic disciplines, it has come to light that the two crucial problems faced by engineering students were students' inaptitude or unwillingness to participate in discussions and to respond to queries. Feedback from the faculty suggested that teachers need to provide content-based instruction and effective communication skills lessons in the class. Based on researchers' experience and observations, most would-be engineering graduates feel that communicating in English is indeed a challenge because most of them are diffident, shy and reserved. In order to prepare students to overcome their fear and be competent in communication, Nunan (1991) writes that: success is measured in terms of the ability to carry out a conversation in the (target) language (150).

The analysis of Nunan's words expresses that one way of enhancing students speaking skills is make them communicate in their vernacular first to overcome their fear and timidity, and eventually make them speak in English. Execution of appropriate classroom activities by teachers of English will lead to speaking in the class. In this perspective another Linguist Swain Three Functions of Output in Second Language Learning. (1995) states: we learn to speak by speaking The classroom can become a place for learning to speak in English for engineers and the facilitators can implement activities which foster fun and frolic simultaneously a platform for interacting in English. More practice sessions can be introduced in the regular classes to ensure quick and proper learning on the part of the students. With more practice, there is ample scope for betterment in speaking abilities. Engineers learn to plan and strategize their meetings, preparations and presentations as

they work to minimize all mistakes and errors for the benefits of their organization. Communication for Professional Development is a prerequisite to students' academic, personal, and professional success in life. Speaking competencies can contribute to individual's social adjustment and participation in interpersonal relationships. Speaking in English for Strengthening of Engineers' personality Communication skill is an essentially important element that would-be engineers need in order to survive the fast-growing globalized world. But communicating in the 'lingua franca' a common language like English has become the prime asset needed for budding engineers. Engineering students need to mingle with people of varied multiethnic and multilingual groups and to accomplish the end result; they need to speak in fluent English. Proficient English speaking skills also strengthens the personality of the engineering students and instills in them the ambition to scale greater heights. One should agree with the words of Alexander V. Sandoval who expressed in his essay, 'The Importance of English': English is becoming the world's language of the 21st century. Most of the world's population, about 70% speak English or, know it. And more than 80% of all stored information in the world is written in English or translated into it. ( www. eagleforum. com). English speaking skill is a communicating weapon for engineering students as it promotes success and ensures a holistic personality. The person who speaks eloquent English will get along with people easily and will be understood much better. What makes an Engineering Student outstanding than the others? The biggest field of study in the world today is engineering. The growing trend for professional course like Engineering is skilled/global Engineers who are well-versed in English communication and presentation skills. There is a need for imparting communication skills in engineering students as emphasized by industrialists, business people and MNCs in India and the world. Most of the Engineering theories taught in colleges are available only in English Language. Hence speaking in English is of utmost importance for engineering students and it requires competency of the usage of English language for different purposes and in different contexts and situations. The following are some of the reasons why budding professionals should learn to speak in English. 1. To enhance Interpersonal Skills Communicating with people in English is the need of the hour. To have negotiations and carry out engineering business, engineering students should use English language to express their business ideas and thoughts. Very particularly when exchanges of information takes place between Indian and foreign countries, one should without doubt use only English language. By employing English language usage in the right manner, interpersonal skills between two speakers are strengthened and speaking in English enables one to have contacts with people across the globe. 2. Career Growth Empowerment of engineers certainly takes place through the use of English language. During the process of seeking employment and growth in one's career, communicating in English is of crucial importance to accomplish mastery in English proficiency. Engineers working with a large group of people coordinate with their colleagues by speaking in English. A technical graduate becomes suitable for a job/employment only if his speaking and writing abilities are very eloquent. It has been discovered that, students who lack speaking skills in English are deprived of enormous opportunities and there are less chances of getting started in the career. 3. Avenues for Knowledge Being globally recognized as the language of science, engineering and technology, students of engineering should be able to master English language especially in the area of speaking fluently. All the data that is available in the books related to computers, science and technology is in English. So if the students do not habituate themselves to speak in English, then they may have to bear the brunt of being exposed very less to sharing knowledge or pathways open to knowledge in engineering. 4. Aesthetics of English Communication Like all other talents, speaking too is an art. But speaking in English is all the more bewildering and one can enjoy the aesthetics of English communication by being exposed to the culture of the world which no other language possesses. Speaking in English offers one the opportunities to perform surprising things. It gives you advantages of changing your life for the better. Speaking in English assures a spirit of friendship and oneness

among blooming engineers and all engineering students should realize the beauty of English language and learn to speak in it to get social status. 5. Interactive Purpose English language is one of the greatest tools for communicating with people of all classes, creed, religion, sex or caste. Exchange of ideas between people of different linguistic backgrounds can take place in a systematic and meaningful manner only if students communicate in English language. Hence speaking in English for engineering students should be the major aspiration to use English for interactive purposes. 6. Elucidating Architecture and Diagrams The work culture of engineering studies deals with drawing, making sketches, working out designs and architecture. To attain this end, engineers should consistently mingle with their peers and use these tools for their work. To discuss the use of these equipments and also plan out different ideas, students should use the simplest form of communication in English. Speaking in English will express their ideas and working together is a sign of complete command over the work. Engineers, scientists and, technologists find themselves at ease to use English communication in a dynamic work atmosphere. It enables them to remain in touch with each other and fulfills their need to a great extent. 7. Creating a Unique Self Profile The power of English communication is so astonishing that it becomes a vital weapon for self-expression. Speaking in English helps the respective engineers to give a self-profile about themselves who they are and what they can do. In conferences or meeting with clients or big officials, speaking in English helps engineers unveil their true efficiency and power of speech. By doing so, a unique and distinct self profile will be created. So speaking in English makes an engineer confident and be extraordinary among others in their career. 8. Technological Inventions The beauty of English is so great that today people are running after this global language which seems to be casting a magical spell in their personalities. As already discussed, books pertaining to professional courses and technological inventions are available only in English language. So to discover and make scientific inventions, engineering students should use only English as a medium of instruction both in the spoken and written forms. Software giants like Microsoft and Apple too have become the most successful performers throughout the world because they used only English as the language of communication. 9. Team Building: Engineering course/ engineering study are considered to be very challenging area in academics. Proper guidance and motivation to the members in an engineering group is mandatory. Team building can be done only by speaking in a common language. To retain the team spirit and unity among the members, sources pertaining to English language such as quotations, sayings and maxims can be employed to make communication meaningful and impressive. The attention of the listeners in the team can be drawn by speaking only in English. So speaking and understanding English has proved that it fosters team spirit and leadership qualities. 10. Research and Development: The advent of science and technology in the 21st century brought about a great revolution. Information Technology brought a new order in the world thus causing apprehension for thousands of employees, across the world. Eventually IT organizations and institutions mushroomed and all the programming languages pertaining to IT were available only in English language. Thanks to the tremendous progress by science that the IT boom brought huge benefits of internet and web services available only in English. So the burden of speaking, writing and understanding English became essential for Engineers to earn their bread and settle down in good positions. The mighty language English today remains a language of dynamism and ensures great research and development even though revolution in IT technology has taken place. English language teaching and learning should certainly undergo a shift in the paradigm to suit the needs of the learners. Though a number of methodologies and approaches are implemented by facilitators in the classroom, yet there should be earnestness and passion among engineering graduates to learn English and consider it as a 'life skill'. The idea that English is a subject should be deleted from the minds of all people and view English as a 'skill subject'. Engineering students should inculcate the

truth that wide exposure to English language speaking is very pivotal in all walks of life to fulfill their future needs

## CHAPTER-6

In present scenario communication skill play a significant role in all sectors. Communication skill are a platform for convey a messages from a human to another human in different countries. In corporate sector it place is very important. As a professional a student should be ready and make good his communication skills. Chalk and talk is still the dominant approach in education, especially for numerical subjects. The main objective of this book is to develop significant communication and qualified assistances by with English as a medium and a sympathetic of moderator in influencing the impending of the students. In addition to their skills in technical skills they should also be well versed in communication skills, in which schools and universities can play a vital role in student's life so as to interact with technical skills as well as communication skills to shape the future. In future, use this book to assess the role and relevance of communication in future on the current state of the technological world and the need of a student to maintain their talent while competing with the world along with two arms like technical skills will be done. Education is widely accepted as one of the most important tools for promoting sustainable development; the necessary change in people's thinking, beliefs and actions has led to an effort to make environmental issues a fundamental focus of all education. For many years, the working engineer has been portrayed as a cliché among the general public. This is a man who sits in front of his computer for ten hours straight, making weird graphs and computations. However, when a discussion ensues, he says that he has a lot of work to do and tries to escape as quickly as possible. This image may be overdue, but this is how the media and television portray the situation (V. Anand 2019). Globalization has a direct impact on industrial needs; a worldwide engineer should be able to jump state and traditional barriers with ease. This has a direct impact on engineering education. Professional engineers will undoubtedly need effective and exceptional communication abilities in this position. Universities are expected to directly meet industry requirements and produce global engineers who are proficient not only in technical capabilities but also in non-technical skills such as communication skills. Many university engineering schools have failed to meet the requirement of introducing such courses. Due to their weak communication skills and lack of confidence, many engineering graduates in India are reported to be unemployed. Several research studies have emphasized the need to enhance employability skills of engineering graduates, yet the problem of weak communication skills is plaguing India (Julfiqar, N. Huda, and A. Pant 2019). Several countries have conducted research in recent years to assess the technical and personal skills that today's business requires of engineers. Today's engineering graduates should have strong communication and collaboration abilities, yet they do not. They need to consider a broader picture of events affecting their careers, such as social, environmental and economic issues, but they haven't. In the end, they graduate with a thorough understanding of core engineering sciences and computer literacy, but have no idea how to use that knowledge in the real world (S. G. Lal, K. Chithra, and V. Nageshwar 2019). Studies have focused on the importance of assertive communication and social interaction in the teaching and learning process in engineering classrooms. Much attention has been paid to the importance of classroom discourse in helping student's communication development (N. Sharma, S. K. Jain, P. K. Singh, and R. Garg 2017) in the education reform movement. Engineering, as a result of the improved literature's emphasis on communication, it is important for teacher educators to be aware of teacher's concepts of communication as a medium to develop a learner's understanding, and to understand how they help students How communication can help develop patterns that promote growth. Instructors should help students improve their communication skills by allowing them to study ideas, increase their understanding of these things, and make connections in and out of

ideas. Various forms of communication, both oral and written, that allow learners to connect with peers and instructors in the development of better engineering knowledge are now at the heart of these interests. Accordingly, it shows an ecological model of communication (D. Foulger 2005) that seeks to provide a platform for the investigation of these topics. It asserts that communication occurs when four key components come together: communication between individuals (producers and consumers) is mediated by messages created using language inside the media, taken from the media, and language understood using. In many ways, this model is a more thorough version of the standard framework of communication research: 'Who says what' into 'which channel, to what effect. ' 'Who' are the message producers, 'What to say' are the messages, 'Which channel' is broad in the languages it means which channels present the content and media (which channels are part of), 'Who' are the message consumers, and influences are found in many relationships among primitives, including relations, attitudes, properties, interpretations, and the continued development of speech communication. 1. 1 Skilful Functional Communication Successful communication is a difficult task that requires mastery of a variety of skills and information. To begin, people must understand the linguistic or grammatical principles that allow them to construct and interpret sentences in a certain language. Linguists and psychologists are particularly interested in how humans develop and process grammatical sentences, so linguistic competence is the term used to describe this type of knowledge. Skilful Functional Communication (K. Roscoe and I. and Madoc-Jones 2008), effective communicators must understand the social rules that govern how language should be used in different contexts and groups of people. Sociological competence is defined as the ability to use and interpret phrases in a socially appropriate or appropriate manner established by the rules of a relevant community or group. Sociologists and anthropologists are the ones who study this type of ability the most, as they try to find out what are the standards for proper speaking in diverse societies. Third, good communicators must be able to formulate and digest communication in such a way that they can achieve their personal and social objectives quickly and effectively. Skilled communicators must be able to create messages that clearly inform, explain and calm people. Skilled communicators must be able to recognize subtleties in the, communication of others, as well as read between the lines to extract meaning, both intended and unintentional. Functional or rhetorical ability refers to the ability to create communication and interpret messages from others that help you achieve your objectives. This type of ability is primarily investigated by communication scholars, and it is the type of competence addressed in this chapter. The Functional communication competence (R. Handa, M. Sunil, C. Gupta, A. Raina, T. Khan, and A. Gulzar 2018) requires more than just the ability to develop messages that effectively meet individual goals. Successful functional communication requires the ability to learn about a variety of communication processes, including reading people and social situations, social perception, message production, and receiving and processing the messages of others. In multinational engineering projects, English will act as a linguistic bridge. Learning English is not the only benefit of multilingualism for the global engineer. While multilingualism in engineering programs is progressively emphasizing provincial communication assistances, studying the primary lingo of a country's county is just as imperative as scholarship English. Globalization has a direct impact on industrial wants; a international engineer requirement be able to annoyed general and traditional restrictions with ease. Multilingualism has become increasingly important as the world is divided into regional networks. English is often considered the most spoken language on the planet. This has a direct impact on the studies of engineering students. For communication, a normal encryption is necessary. Educational institutions that meet the criteria for the new global engineer's language will be ready for the next millennium. Inadequate communication skills in engineering education have the effect of weakening the overall profile of the teaching professional engineer. This has an impact on the recruitment and retention of engineering students (C. S. Ramos Meza 2021). The roles of engineers in society are evolving, placing new

constraints and expectations on engineering faculties in universities around the world. Engineering education needs a comprehensive approach to make graduates capable of leading the engineering profession to face the increasing constraints and difficulties due to the expanded duties of an engineer. Engineers are expected to work in both technical and non-technical capacities. Good English communication abilities are an essential feature of an engineer's career, and a lack of such skills only damages an engineer's image, as one famous author points out (X. Cheng and L. J. Zhang 2021). One of the most common reasons engineering students fail to interview is a lack of efficient communication with their potential employers. Many final year students lack self-assurance as they prepare for their campus placements. Being a good communicator doesn't end there when you've got a job. In addition to his technical abilities, he must be excellent in human communication to deal with circadian activities. Only 20% of the time is spent on actual engineering, while the other 80% is spent writing and communicating with colleagues and superiors. Employers are looking for more than just technical talent. The job requires people to work creatively with others. Employers nowadays are not looking for engineering geeks who will spend their entire working day in the office with engineering calculators. Even if you are the best engineer, if you are unable to convey your thoughts and ideas to others, no one will notice you (H. Bussell 2021). Three areas of weakness have been found that can have a substantial impact on an engineer's communication skills education: Communication approach among students. • Inadequate course material. • Inadequate or ineffective teaching techniques. • Another important factor was the lack of opportunities for engineering students to develop their communication abilities, especially their verbal communication skills. Another requirement of technical communication is writing ability, which is defined as the capability to engrave effectually in a variety of situations and in upright English using memos, gossips, despatches, profession comparisons, operative guidebooks, electronic mail to various audiences and for purposes. E-mail letter, telegram, fax, contract, advertisement, brochure, or news release. Reports typically account for only 75% of an engineer's total writing time, yet they are the most commonly used tool for job advancement. There is a widespread misconception that reports are long documents with difficult and specialized jargon that only the most experienced engineers can understand. On the other hand, state that the all beneficial points which are responsible for create an effective communications (P. S. Matreja, J. Kaur, and L. Yadav 2021). Most reports are prepared for those who are not familiar with engineering, and the purpose of an engineer is to express his designs undoubtedly abundant that the somebody who reads it understands what the engineer has written. Employers need individuals with strong writing abilities for a number of reasons.

1.2 Message Production Skill Communication The progression of creating unwritten and nonverbal behaviour to elicit a preferred comeback from the people to whom they are addressed is known as message formation. Individuals can more easily and successfully achieve many personal and social goals if the message generation process is successful. Message production is a complex process, and there are many different message production abilities, as are many different social perception skills. I'm only interested in one broad message-building skill: the ability to create highly personalized messages (M. Plenковиć and D. Mustić 2020). Some of our communication efforts are focused on carrying out normal, everyday activities (saying hello to an acquaintance, asking or answering direct questions about the time or weather, etc.). Author usually don't pay much attention to the particular qualities of the person or audience with whom we engage when communicating to carry out these easy, repetitive activities. Instead, we can use traditional, scripted message formats that are appropriate for the situation.

1.3 Social Perception Communication Skill The mental process of seeing, recognizing and understanding objects in the world is known as perception. Perception is a process that requires active participation. That is, the author does not acquire knowledge about the ecosphere passively, and the environment does not

immediately enforce himself on our minds and mind. Relatively, the author vigorously understands the world: the author selectively directs our attention to specific aspects of the world at any given time; The author classifies things that the author notices in terms of mental categories that the author has acquired; The author obtains information about similar experiences from memory and looks at current experiences in the context of those memories; and the author infers about the nature of the present experience, its causes and consequences; And the author speculates about the nature of the present experience.

The process by which an author makes sagacity of the anthropoid or social world, counting our own practices, other individuals, social interactions, and social establishments, is called social perception. Other people's behaviours and traits are very important in most social situations, and we spend a lot of our mental energy and attention on them (T. Hussian, M. Choudhary, V. Budhwar, and G. Saini 2021). The author seeks answers to a variety of inquiries about individuals in the human environment, including who they are, how they relate to us, what kind of condition they are in, what they are undertaking, their purposes and purposes, and their particular Features. Because individuals rely on their communicative behaviour over their perceptions about the actions, traits, roles, intentions, and dispositions of others (as described in earlier sections of this chapter), social perception is particularly important for communication. In other words, your thoughts about people outline your own communication behaviour towards them as well as your interpretation of others' communication efforts. Many diverse social perception processes have been investigated, including influencing recognition and recognition of the emotional states of others, assigning reasons for another's behaviour, and nonverbal decoding, which, determines the meaning of nonverbal behavior. Incorporating data and putting together differing knowledge about others to create a cumulative effect. Integrating identifying and matching potentially conflicting information about others, as well as generating impressions by combining different information about people into a single overall impression. These are all input-oriented cognitive operations that the author uses to describe and understand social situations as well as the characteristics, thoughts, and behaviours of other people, According to A. Nayak. (A. Nayak and M. T. Nayak 2016) there are many broad, deep and basic definitions of etymological and language is "a assemblage of condemnations, each of fixed measurement and assembled from a predetermined set of components. " According to the dictionary, language is described as a system of traditional spoken or written symbols used by individuals in a common culture to communicate with each other. A language reflects and influences the way a culture thinks. Language, on the other hand, is defined by the Oxford Dictionary as "the means of human communication, either spoken or written, consisting of the organized and traditional use of words. " The core of the language remains the same, whether by Chomsky's definition or more contemporary. Language is made up of rules and elements, and can be spoken or written. It represents the culture and way of thinking of the speakers, and is widely used to transmit ideas. According to another author, R Sharma. (R. Sharma, P. K. Garg, and R. K. Dwivedi 2017) many meanings differ depending on the position in which the speaker is speaking. In the context of major studies, it can refer to literary works such as fiction or literature. Literature, as it relates to literary writing, can be described as works of aesthetic and moral quality, such as those found in canon or great tradition, or as innovative and inventive writing. R. Sharma defines literature as writings of superior or lasting creative value that reflect concepts of lasting or universal importance. Oxford defines literature as written works, especially those deemed to be of superior or enduring artistic merit. Some of the qualities associated with literature are sublime, artistic, creative, inventive, expressive, valuable and universal. As a result, a tool language is essentially necessary to present its properties and entity. It becomes the only option and the only way out. 3. In this training the quality of announcement abilities in communicating material or measured issues complete inscription was evaluated. Written announcement is



more complex than simply conveying the author's ideas to the reader's mind. Writers and readers have different perspectives on the problems being covered, which will affect the formulation and interpretation of the article. This investigation can lead to a variety of interpretations. Students' math communication skills are divided by researchers into two categories: moderate and poor. This can vary from how students feel and what they express in their book. The findings also showed that guided search learning had an effect on students' math communication abilities. Other studies have found that students' past knowledge has little effect on their ability to communicate mathematically. The interaction of these two elements has little effect on the mathematical communication abilities of the students. Since Graduated Driver Licensing (GDL) has a more dominant effect on mathematics than conventional teaching, this study is expected to explore the impact of guide encounter scholarship on student's calculated announcement abilities. This was demonstrated by increased classroom participation and a favourable insolence near calculation, as well as upgraded scholarship conclusions. However, the findings of this study revealed how much knowledge the students had about the information given. Students should convey through their written communication given through their exam answer sheets what they know and what not.

According to constructivism, people actively interpret their experiences and these interpretations have a significant impact on their behaviour. The complexity of people's explanatory plans or constructions varies, and these disparities in cognitive complexity have important implications for social perception, communication construction, and reception abilities. People with a greater degree of relational intellectual complexity generally have better community awareness and communiqué abilities, although the affiliation between cognitive complication and particular assistances can be complex. Researchers have discovered much about the factors that influence the development of cognitive complexity and related communication abilities in children. Unfortunately, little is known about how individuals can increase their cognitive complexity and communication abilities in a consistent manner. Much study is needed on communication skills training; perhaps some of you will contribute to this area in the future

## CHAPTER-7

Poor spoken **English** may be keeping a large number of India's **engineers** from landing some of the best paid **jobs** in the country. A study has found that an overwhelming 97 per cent of engineers in the country cannot speak English, required for high-end jobs in corporate sales and business consulting. Moreover, as per the report based on the study, about 67 per cent of engineers graduating from India's colleges do not possess spoken English skills required for any job in knowledge economy.

The study, 'The National Spoken English Skills of Engineers Report', conducted by **Aspiring Minds**, surveyed English skills study of 30, 000 engineers across 500 engineering colleges.

Although the problem is far more pronounced in tier 2 and tier 3 colleges, instilling spoken English skills is a big challenge in Indian Institutes of Technology and National Institutes of Technology as well. About 600,000 engineers graduate annually in India.

"We get students from different backgrounds and regions, and they are mostly not comfortable with English," said Gautam Biswas, director, IIT Guwahati. "Quite a few students appear for the joint entrance examination in their mother tongue. It becomes very difficult for them to follow the curriculum."

UB Desai, director of IIT Hyderabad, said the problem of students not being able to speak English is not restricted to IITs but is prevalent across the country, and even in China and a few European nations. "Over the years, the focus in the education system has shifted to chemistry, maths, physics. Focus on soft skills has

reduced. Students may lose out on good job prospects as many companies come to campuses for global positions as well," he said.

Engineering students in the metros do much better in spoken English skills than those in the non-metros, according to the study. Kushal Sen, dean — faculty at IIT Delhi, affirms this. "A majority of our students may not have the problem of **speaking** in English but about 30 per cent need to be groomed when it comes to soft skills," he said. IIT Delhi offers its students courses in soft skills.

Tier-1 colleges fare better in spoken English skills than their peers down the line. "As expected the spoken English ability of candidates becomes worse, on average, in campuses in lower-tier cities," said Varun Aggarwal, co-founder and chief technology officer, Aspiring Minds.

Recruiters and HR managers around the world report that candidates with English skills above the local average stand out from the crowd and garner 30-50 per cent higher salaries than similarly qualified candidates without English skills, according to Aggarwal. "The trends in India are no different, with English fluency being one of the key qualities recruiters look for during the interview," he said.

IIT Madras's dean (planning) R David Koilpillai said, "Students must be able to communicate technical ideas clearly in interviews. Proficiency in spoken English gives confidence. " In the past two-three years, NIT Trichy has taken corrective measures in this regard. "Students not able to speak or even understand lectures in English is a major problem," said Srinivasan Sundarrajan, director. The institute organises bridge courses, workshops and orientations for the students. "The seniors at our institute too help out juniors," said Sundarrajan.

The key problem faced by engineers is pronunciation, followed by fluency skills, grammar and sentence construction. Engineers show a larger gap in elements of spoken English, pronunciation and fluency, followed by grammar, though they do relatively better in vocabulary and understanding English. As per the report, only 6.8 per cent engineers show the ability to speak or respond spontaneously.

### **ET view: Upgrade the Software**

English is the global language of business and indeed enterprise. The situation is unlikely to change in a globalised economy in the future. Therefore, proficiency in English must be seen as a necessary skill, and not some ingredient for a post-colonial cultural debate. The new economy is amply incorporating Indian languages, with the user base for mobile phones and the internet growing at 47% a year. So there is no need to worry about non-English languages being left in the lurch. Engineers, and indeed other professionals, must load themselves with the English 'software'. It is nothing short of an upgrade.

In this rapidly changing globalized world, proficiency in English is considered as one of the crucial employability skills. It is considered life skill or 'survival skill' in the 21st century. Students of professional courses especially Engineering need to be able to think critically, solve problems, communicate clearly, be creative and work in a team in order to get placed in a reputed company. The need for the students of engineering to be trained in a multitude of transferable skills is high (Hatakka, 2005). While the demand for talented engineers is high in MNCs, there is a huge skills shortage in the country. Employers complain about fresh recruits from engineering colleges not being 'industry ready'. The urgent need to improve technical students' communication skills has been emphasized by educationists as well as employers. Narayanan, Chairman, NASSCOM, (Warrier, 2007) said "The industry has moved forward rapidly and technology also has changed but the educational institutions and the curriculum have not changed that rapidly. There is a dire

need to bridge the gap by providing additional training to the people who are coming out of colleges so as to make them industry-ready.” This perceived problem of lack of communication skills among engineering students makes the researcher raise a key question whether there is a gap between the course of Communication Skills taught in the Engineering colleges affiliated to Gujarat Technological University (GTU), Gujarat and the academic and professional needs of the students and whether there is a need to revise the course of so as to meet language needs of the budding engineers for proper application in the workplace context and also in real- life situations. The study involves a survey conducted by administering questionnaires upon 60 students and 30 English teachers of various engineering colleges affiliated to GTU. The evaluation of the course has necessitated the urgency of implementing Course-Book to enhance teaching-learning process of Communication.

The importance of English, in India and in Gujarat, as a subject of formal studies and as a skill has been under scrutiny and debates for decades now. However English has been indispensable virtually for all disciplines. While English has been a compulsory subject for conventional degrees, ‘communication skills’ in one form or the other, in one name or the other, has been a subject of concern for technical, vocational and professional courses. At present, because of the globalization and liberalization, there is a need for developing effective communication skills. In settings like India, ELT and Communication Education have become synonymous. English being the preferred medium of formal communication and language being the basic development of communication skills, English Language Teaching has a vital role to play in the development of communication skills. Students of professional colleges need a great deal of help in improving their ability to communicate in English to obtain easier entry into the corporate world. Keeping this objective at the focal, most of the syllabi of the course of communication skills are designed in almost all the universities imparting professional education in Gujarat. Similarly, it also brought out a change of syllabus in the technical education too along with the transition of syllabi into other professional programs.

The present syllabus of Communication Skills in all the Engineering Colleges of Gujarat affiliated to Gujarat Technological University (GTU) aims at catering to the needs of students to develop their inter-personal and professional communication abilities. It claims to be designed especially to meet students’ current and future language and communication skills. It also attempts to develop their proficiency in the four language skills i.e. Listening, Speaking, Reading and Writing of English language along with enhancing their knowledge of grammar and vocabulary. The course contains guidelines for teachers wherein they are made aware about the process and evaluation pattern for the course. Though, no specific and exclusive textbook is prescribed, rather, many reference books covering some of the contents of the syllabus are suggested as teaching and reading material for students as well as teachers. There is no specific course book designed or prescribed, rather isolated syllabus contents focus on developing essential skills requisite to fulfill professional requirements of the job market.

The increasing specialization of content in English teaching curricula saw its beginning in the early 1960s. English language plays a major role in transmitting knowledge as a means rather than as an end in itself. Teaching of English generally is treated as teaching with utilitarian purpose. English language usage taught at the school level is less communicative in nature, but consists more of how the syntactic rules of English operate. Generally, adults use English language only when associated with an occupational, vocational, academic or professional requirement. When needs are clear, learning aims can be defined in terms of these specific purposes under which the language content are tailored. This results in focused teaching such that the learner picks up communicative ability in the required area. The results can be impressive where such a

requirement for communicative ability is matched with specially designed materials relevant to the needs of particular students. According to Mackay, "A difference in approach from the current 'start at the beginning again', or remedial 'solutions' is needed, when English ceases to be an examination subject and assumes the role of instrument of communication".

To meet the rising needs of English language teaching, variants of general ELT have paved way to English for Specific Purposes (ESP), English for Academic Purposes (EAP) and English for Occupational Purposes (EOP). In all the above-mentioned variants, the nature of the purpose involved is self-indicative. ESP marks advancement in the conventional framework of ELT, which defines the teaching requirements depending upon the specific needs of different groups of students. MJAL, vol: 1:1 February 2009 1:1 English language teaching in India: a theoretical study Narayanan, et. al.

ESP advocates the designing of special courses instead of one multi-purpose course, to suit the needs of various groups of students. The concept of ESP is said to be particularly appropriate for teaching English to students of science and technology (EST). Besides, English at the undergraduate level of engineering studies differs from English in other undergraduate courses because it has a specific purpose unlike a general purpose in other colleges. It differs from other courses in the three aspects, such as relevance, register and style. These three aspects gain prominence in material designing because the course must equip the learners for both academic and professional requirements. Their academic functions include oral and written communication, comprehension of lectures and books, note-making, note-taking, book presentations, participation in regional, national and international seminars and taking interviews.

'The time has come to create a second wave of institution building, and of excellence, in the fields of education, research and capability building so that we are better prepared for the 21st century.' (PTI, August 2, 2005) says Dr. Manmohan Singh, Prime Minister, India at the inaugural of National Knowledge This goal, according to NKC, can be achieved by creating a favourable environment for equitable and universal access to knowledge resources. In view of this, the central government and the state governments in India have been striving to upgrade the standards of education and have been adopting strategies to cater to the varying needs of learners across the country.

According to National Knowledge Commission, "The current curriculum should be modified to provide greater flexibility, interdisciplinary perspective and choice of electives. The focus in the teaching/learning process should be on integrating skills such as problem solving and logical reasoning, process orientation, learning ability, English communication and programming fundamentals. Industry participation to discuss real life case studies should be encouraged. Laboratory courses must be revamped to develop a healthy attitude towards experimental work. Environment must be created to encourage students to participate in co-curricular activities." (Pitroda Sam, 2008, NKC web)

Education Reforms in India has in general emphasized 24 dimensions out of which 06 dimensions are related to Curriculum design and evaluation. Owing to the emerging needs of the state for hi-tech industrial development, it has become imperative to generate a stock of highly technically skilled manpower. This in turn has necessitated bringing about sustainable improvement in the overall quality and growth of technical education, including engineering education in Gujarat. As a result, it has generated the need to assess and evaluate present syllabus used to develop essential language skills and thereby satisfying the learners' professional needs to be successful at a workplace. It is because, it is syllabus which is generally considered accountable for the effective teaching and learning program which should be based on the needs of program. As Widdowson (1984) said, the syllabus is a framework within which activities can be carried out to facilitate

learning. In a nut shell, the successful and masterly designing and implementation of the syllabus materials is accountable and prerequisite for the effective teaching and learning of the course. Therefore it is very much necessary to find out how effective the course of Communication Skills is. The effectiveness of the course can be evaluated through continuous assessment or by conducting survey targeting teachers, learners, methodology and components of the course. This will provide ‘wash back’ effect and may lead to bring out necessary changes in the existing program.

As the range of employment for engineers and technologists expand in the twenty-first century, there is a need to teach multiple skills to engineering students. As engineering students are required to communicate effectively in different situations, think creatively and critically, demonstrate good interpersonal and team skills, and have a set of soft skills demanded by recruiters, the course of Communication Skills should be modified based on the needs of students and expectations of recruiters.

“A CRITICAL STUDY OF THE COURSE IN COMMUNICATION SKILLS OFFERED IN THE ENGINEERING COLLEGES AFFILIATED TO GUJARAT TECHNOLOGICAL UNIVERSITY (GTU)”

### **Definition of Terms:**

GTU stands for Gujarat Technological University and which is located at Ahmedabad, Gujarat, India. It is the affiliating university for Govt. and Self-financed Engineering (Degree and Diploma), Pharmacy, Management and MCA colleges in Gujarat.

Course of Communication Skills: Students of engineering and technology studying at the institutes affiliated to GTU are offered the Communication Skills course for first or second semester during their first year programme.

### **Delimitation**

The present study tries to explore the efficacy of the course of “Communication Skills” in developing required inter-personal and language skills of the students of 1st year pursuing Bachelor of Engineering in Gujarat Technological University- GTU. It analyzes the syllabus on the basis of the parameters like inclusion of essential components focusing on developing required skills useful at the workplace, teaching methodology and assessment criteria etc. It aims at finding out the limitations of the course and providing suitable recommendations so as to make it effective. It also proposes the inclusion of “course book” in the Curriculum so as to deliver contents successfully to the students. However it does not comprise designing of comprehensive syllabus for the Engineering.

What are the components of the syllabus? Are they suitable to develop “communication skills” of the students?

How is the present course helpful to the students?

What is the teaching scheme (contact hours and credit) and examination scheme of the course of Communication Skills for teaching theory and exercising practical in the classroom and lab? Are they sufficient to develop and enhance communication skills of the students?

What are the goals and objectives of the course? Are the components of the syllabus in correspondence with them? Is the course able to fulfill them?

Is the syllabus compatible, relevant and sufficient enough to cater to the language needs of the students?

Does it focus on generating employability skills of the students along with study skills?

What are the perceptions of the students and teachers regarding the syllabus? Do they seek any limitation? If yes, what solutions and recommendations do they think of?

What is the nature of teaching material? Is it interesting, authentic and suitable to the needs of the learners so as to make them feel at ease and help generating confidence? Is there a scope for adapting the instructional material? What approach was selected for its selection and subsequent evaluation? Is it integrated and having wide-ranging coverage?

What is the scope and system of updating syllabus? Does it aim at developing conversational and communicative ability of the learners?

Does the course offer any guidelines and support for teacher to make the teaching effective? Does it advocate the use of modern technological tools of communication and teaching-learning in the classroom and in lab?

What specific expertise and skill sets do industries look for in their prospective employees?

What are the strengths and limitations of the course of Communication Skills?

What changes should be brought about in the English curriculum at technical institutes to improve students' communication skills and thus prepare them to the workplace?

Research Hypothesis: The present syllabus used in the Technological Universities falls short of the language needs of the students.

Null-hypothesis: The components of the syllabus of the course of Communication Skills are not sufficient and suitable to develop essential language and professional skills of the students.

To assess the close correspondence of the objectives of the syllabus with the goals of the teaching program and with the needs of the learners.

To judge the comprehensiveness of the syllabus in terms of coverage of the content and required skills.

To analyze and evaluate how the contents are organized and sequenced.

To examine the adequate coverage of essential language skills suitable to the level and interest of students.

To discover how far the topics in the syllabus are interesting and motivating.

To find out and evaluate the approaches to language learning prescribed by the course designer.

To inspect the adequacy of the guidance provided to the instructors in the guidelines for effective execution of the syllabi in the classroom.

To examine the validity and suitability of the assessment-scheme of the course along with scrutinizing its correlation with the objectives of the course.

To assess the learners' needs taking into account the specific purposes for which learners will use the language in their jobs, the kind of language required in their field, the starting level of proficiency and the target level envisaged.

To evaluate the existing course materials: to focus on what has been going well and to ask what have been the most significant contributing factors so that less successful can be modified.

**Research Procedure:**

Directing questionnaires to the learners and teachers to find out their perceptions about the effectiveness and usefulness of the syllabus and the course of Communication Skills.

Analyzing and evaluating the course and syllabus on the basis of given criteria.

Proposing the obvious need of the “Course Book” for the effective implementation of the syllabus components so as to generate required English language competency among the students of 1st year Engineering.

Tools: A survey administering questionnaires for teachers (who teach the syllabus), and students of 1st year Engineering (to whom the syllabus is taught) was conducted to assess the efficacy of the syllabus in developing crucial language and professional skills prerequisite to be enhanced to work effectively at the workplace.

The entire course and especially syllabus has been analyzed from different perspectives such as students’ perspectives and teachers’ perspectives. Apart from this, course in general and syllabus in specific was analyzed from evolved criteria. The purpose of looking the course from different perspectives gives an objective view of its effectiveness.

It has been found from the present study that the course and syllabus of Communication Skills in use by GTU affiliated engineering colleges need many changes and modifications. The same syllabus has been offered to the students of all the Engineering Colleges (Grant-In-Aid as well as Self-Financed) affiliated to GTU and it has been designed only for the first year students. They are not suggested any specific Syllabus to refer to, rather they are just given the syllabus components and for the study of those components the students have to rely upon various reference books and study books published by various publication houses. As a result, the quality of the study material is so poor and does not become successful to make the students study well and develop essential skills required to serve their various academic and future workplace needs. Though the quality of the students varies from average to good, the employability ratio of the students of most of the engineering students is reported as poor.

As it is not specifically designed for engineering students, there are topics like business letters in English or Paragraph writing/Essay writing which are not relevant to the engineering students. According to responses of most of the teachers and students, the course material is not very appealing, it does not provide varieties of activities and the components of the syllabus are not sufficient to satisfy communicative needs of the students.

Syllabus focuses to develop only to some extent or not at all some necessary study skills and professional communication skills like analyzing and interpreting of subject content, understanding other subject books, participating in discussion and debates, summarizing and elaborating the text or ideas, presenting new views, getting exposure to conventional and modern modes of Communication, learning and mastering Professional Writing, training in conversational and spoken English, learning correct grammatical construction in written or oral communication, reading Scientific or Technical texts, listening to lectures and making notes etc.

The aspects and skills like soft skills, speaking skills, Professional/Technical-writing, corporate ethics, teamwork culture, grammar, and internet communication skills, verbal reasoning skills, interpersonal/group communication, decision-making, problem solving skills, leadership, group behavior/dynamics, phonetics practice etc. which are the most important and relevant skills of 21st century but not included in the syllabus/course of Communication skills. Even other skills like interview, group discussion and presentation

skills are there in the syllabus but there is no provision in the course to provide guidelines about teaching material and styles to be applied while dealing with these units with the students. Listening unit is there in the syllabus however there is no practical suggestion regarding improving listening of the students. Moreover, there is no provision where students can be given exposure to Listening and Speaking Skills. Reading and Vocabulary sections are there up to certain extent but because of the lack of prescribed books; it becomes difficult to understand how to teach them without any context. For reading there are just theoretical suggestions but no practical guidelines and provisions. Interview Skills is one of the components of the syllabus. However, in the unit except types of interview and do's and don'ts, no practical applications are suggested.

The course does not at all focus on speaking skills components. It is observed that very less attention has been given to reading, writing skills and especially speaking skills. Vocabulary part in the course receives less attention. For example, the course does not provide any material on the development of technical or sub-technical vocabulary. Thus, the present materials for teaching English and developing Communication and Soft skills of engineers do not exploit the registers required for the engineers. In the last unit, which is focused on developing grammar knowledge of the learners, almost all the activities are based on sentence level exercises, such as fill in the blanks, correct the errors etc. There is no to use the knowledge of grammar for the sake of effective communication.

Most of the teachers were of the belief that the components of the syllabus are not sufficient to develop or enhance communication skills of the students of engineering. They suggested inclusion of topics like employability skills, presentation skills, reasoning skills, interview skills, group discussion skills, interpersonal and group behaviour, team building, people skills and social skills, modern communication tools, E-Etiquette, Business Communication, Report and Proposal Writing, Project Writing, Book presentation tactics, etc. into the course of communication so as to make the prospective engineers employable and industry-ready. Most of the teachers were of the view that it does not develop the employability skills of the budding engineers so as to make them survive in the job market.

The syllabus components of the course of communication skills do not help the students to study other subjects of Engineering. The present syllabus and teaching, learning and evaluation pattern just focus on enhancing general writing skills of budding engineers. Except writing, for the other components and technical aspects of syllabus the students have to mug up without understanding and as a result they are unable to write specific technical formats or to write something creative. They cannot prepare the user-manual or technical proposal, or even cannot draft appropriate business letter or technical report. Moreover, instead of aiming to fulfill, long ranging and international goals, the syllabus just mostly focus on achieving only regional or national or short ranging goals. Surprisingly the course does not contain any of the objectives at all.

The design of the course is based on language skills such as listening, speaking, reading and writing and the knowledge of grammar and vocabulary. All these aspects of language have been presented in separate discrete chapters. So, there is no scope for the literary genres like prose, poetry, drama, stories etc. in the course. As a result there is no scope for teaching and developing various language skills in context because all the skills-related units are offered to teach in isolation. The skills mentioned in the course are not integrated and bears no resemblance with the real life communication. Since the course does not provide opportunities for real life communication, the engineering students find it less useful and not very much appealing. The course does not have catered a large space for grammar. There is no Chapter describing sounds of English and devoted to listening and speaking. The learners are not familiarized with International Phonetic Alphabet (IPA), stress



variations, strong and weak forms of structured words, and intonation in English language. There are no section which include activities like, phonetic transcription listening and repetition, listening and filling up blanks, syllable division, reading texts, use of dictionary etc. None of the activities are suggested and involving the use of the audio CD. Students are not given listening practice to the audio CD and perform certain tasks such as filling given blanks, listen and to repeat etc.

The syllabus does not contain adequate components for study skills development. There is not at all a mention of how to use dictionary, which the foremost required skills for the young learners of language. Study skills such as note-taking, note making, information-transfer etc. do not get any place in the Syllabus. Apart from this, the Syllabus does not provide enough support to the teachers in planning lessons. Because of the lack of a Teacher's Manual, it was observed that many teachers still teach through 'lecture' method, where learners are supposed to listen and make note. This may not help the engineering students to learn. There is not even a one page note to the teacher to guide them in planning lessons. No activities are suggested in the Syllabus, then how can there be a scope of inclusion of varieties of activities to capture students' attention and interest. Activities like information gap, opinion gap, information transfer, etc. are not included in the course. Inclusion of these types of activities could have generated interest among the learners.

Neither the course nor the syllabus provides any guidelines regarding assessment criteria. The scheme of the course is (1+2) i.e. one hour of the theoretical exposure and two hours of practical exposure, which is actually very less. Most of the teachers were complaining about the less time (just one semester i.e. actual teaching of 2.5 months only) wherein they have to complete lengthy syllabus of 14 chapters. As a result there were around 60% teachers who could not complete the syllabus in time and giving the students the rest units as self-study. They were all suggesting modification or change in the teaching scheme or evaluation criteria. There were many (70%) who suggesting 3+4 i.e. three hours of theoretical exposure and four hours of practical exercises for students in each 1st and 2nd semester of an Engineering Course. In order to make the students employable and industry-ready 60% of them were suggesting offering some separate courses like "Professional Communication", "Technical Communication" or "Industrial Communication" for the students of both 5th and 6th semesters of Engineering Course studying in various Engineering Colleges affiliated to Gujarat Technological University (GTU).

English for Specific Purpose (ESP) as a course concentrates more on language in context than on the aspects of language like grammar and vocabulary without any context. The focal point of ESP is that English should be taught as a subject, concentrated to the students' real world and it should be integrated in to the subject matter areas of the learners. In the case of the Syllabus in study, language used in the real world of engineers is not focused upon. Instead, the contents of the syllabus put more emphasis on grammar and language structure without connecting to the learners' context. The Syllabus needs to incorporate topics and themes that center on the language used in the field of engineering.

The lack of adequate training of teaching English was observed in the teachers handling the Syllabus in the classroom. It implies the fact that trained teachers are indispensable part of language teaching. In order to compensate for the lack of training, GTU should provide frequent training and workshop to the teachers of English. It has also been found that the note to the teachers in the Syllabus does not provide ample guidance to the teachers regarding the objectives to be fulfilled and methodology to be used in the class room. A teachers' manual in the form of a booklet should be provided to the teachers. Examples of different procedures and methodology to be used in the classroom can be comprehensively given in the teachers' manual. Apart from this, models of lesson plan with a time frame for each chapter can be included in this manual.

Inclusion of topics like presentation skills, group discussion skills and interview skills, persuasion and negotiation skills, inter-personal behaviors, group dynamics, verbal reasoning skills etc. are highly essential for academic and professional needs of an engineer. As the present Syllabus does not cater to these needs, such topics should be included in further modification of the Syllabus. Engineering students are expected to attend seminars and conferences and present research book on their areas. Any Syllabus for engineering students needs to provide this component also.

In the entire eight semesters of engineering course, English occupies only in the first semesters. By the time students reach to the eighth semester they tend to forget all the skills needed for interviews and jobs. Thus the course of English needs to be extended up to eighth semester so that students would get enough practice before facing interviews and going to the world of engineering. Apart from basic communication skills, courses like “Professional Communication”, “Technical Communication” or “Industrial Communication” should be offered to the students of 5th, 6th or 7th semester pursuing engineering in various colleges affiliated to GTU.

However, there are very few positive aspects the Syllabus possesses. The first two units of the syllabus cover all the issues pertaining to communication in a very comprehensive manner. Further, there is a very much need to attach an audio/video CD dealing with some of the syllabus components in Indian accent which helps the learners listen and understand the contents without any anxiety of encountering the language in a foreign accent. Moreover the course book which need to be implemented for the students to study their components effectively should also be well organized, full of pictures, images and graphs, interactive, user-friendly and attracting the students’ attention and interest so as to make them study those components very well.

There has been a scope for designing a new course or course book keeping in mind the needs of students of professional courses. Moreover, that course book can also be evaluated to assess its effectiveness or to suggest further improvements. In the present context a survey on the course specifically on syllabus materials and methods used in the colleges of engineering under GTU is needed in order to find out the materials being used and its efficiency and suggest further improvements into it. Apart from this, a course book containing effective teaching materials to complement and supplement the Syllabus should be designed and experimented to find out its effectiveness.

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