



TECHNICAL ENGLISH FOR ENGINEERS

G.PADMAJA RANI

Assistant Professor in English

TKR College of Engineering & Technology

galidevarapadmaja@gmail.com



ABSTRACT

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 paper 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.

Key Words: Technical terminology/ vocabulary, Writing, Components, Design and Measurement

Introduction

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 socio-economical, 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 skill, 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 takes 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 upto 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.

The following terms related to English language and learners to comprehend are:

- Abbreviations.
- Adjectives - Eg: positive ones like 'reliable', negative ones like 'rusty'.
- Consequences - cause and effect.
- Countable and uncountable nouns.
- Dimensions, plus other units of measurement like pressures, temperatures and other numbers.
- Directions - Eg: 'vertical' and 'anticlockwise'.
- Equipment and tools.
- Language to describe health and safety requirements – Eg: model verbs
- Manuals
- Materials
- Antonyms - Eg: 'loose' to 'light' and 'plug in' to 'unplug'
- Parts of speech - Eg: 'loose' / 'looser' and 'wide' / 'width'
- Parts of Things - Eg: Leg of a chair/components and how they are put together
- Positions - Eg: 'in the top left corner'
- Presentations - Eg: 'A design (or) To explain an engineering failure
- Process - Eg: 'first of all' and 'after that'
- Reports - formal, informal
- Shapes - physical representation like square, rectangular, oval, cylindrical and etc
- Talking about projects - Eg: 'check' and 'measure'
- Things that machines and devices do and have done to them - Eg: 'pivot' and 'break down'.
- Trouble shooting conversations – Eg: Helpdesk phone calls are using 'enough' and 'too'
- Words which are always plural – Eg: 'scissors', 'overalls', 'premises', 'tweezers', 'pincers', 'pliers'.

And words which have different general and Technical meanings.

Conclusion

This paper 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.

References

1. Excerpts from Paper Presentation of *SRM University* 5th National Level Annual Conference, Chennai.
2. Jeff Butterfield (2014), *Softskills for Everyone*, Cengage Learning, Delhi.
3. Krishna Mohan, Meera Banerji, *Developing Communication Skills*, Macmillan India Ltd.
4. Lakshminarayanan K.R, *English For Technical Communication*, 2nd Edition, Scitech.
5. Rizvi, Ashraf M (2005), *Effective Technical Communication*, Tata Mc Graw Hill, New Delhi.
6. Sharon J. Gerson, Steven M. Gerson (2007), *Technical Writing Process and Product*, 5th Edition, Pearson Education Inc.

Suggested Reading

1. Sylvester, Nicholas. D. Engineering Education. "Engineering Education must improve the Communication Skills of its Graduates". 1980
2. Crystal David, "English as a Global Language", 2nd Edition. Great Britain, Cambridge University Press 2003