

# Communication Skills For The Engineering And Science Students

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**Abstract-** In today's world of information and technology and global competition organizations seek employees who have excellent communication skills. The present day work places invest huge amount of effort and money in orienting their employees in all the four areas of communication skills like writing, reading, speaking and listening. The individuals who with their excellent communicative ability only are effectively benefited and able to meet the challenges of the professional world through diverse path such as writing, speaking, reading and listening. So, that the students of science and engineering should be familiar with the various aspects of technical communication skills. They have to learn how to plan, design, and draft a document for a broad range of situations and applications. They should explore the types of business letters reflecting current practices and different techniques of drafting them. The educational institutes, in addition to emphasizing the core disciplines and core subjects, should also take extra initiative to hone the communication skills of their students for the job market.

**Keywords-** Technology, Global competition, Organizations, Communication skills, techniques of drafting, educational institutions.

## I. INTRODUCTION

It is the fact that a viable life in a corporate global world cannot be imagined of without the felicity of using English every moment. The scenario of teaching communication skills to the engineering and science students is still bleak in some of institutions. So as described above, the four areas of communication skills writing, reading, speaking and listening, lets discuss the importance of writing in the technical field. In the recent past years, new channels of communication, e.g S.M.S, e-mail have emerged and the form in which language is used in these channels is having a profound influence on student's writing skills, especially when drafting documents. Moreover, in the modern media, such as advertisements, celluloid we often find that English language is used in a contorted form. If the students use this same form of english language when communicating as used in these media, it will be a reflection of their casual attitude. To prepare a effective documents they have to learn the preparation of different drafts, for that they should provided

with several forms of business writing keeping into consideration the technicalities that differentiate technical writing form and general writing. Reports, letters, memos and other technical documents differ over other forms of writing in terms of form layout principal and language, suitable words and phrases, sentence construction, proper paragraph length. Writing report is an important ingredient in the modern-day world. Now- a-days all of us have to carry out some kind of business dealing, in addition to our daily personal works.

## What is technical writing

Speaking and writing are integral parts of our day-to-day communication. Before going in detail about technical writing and speaking. We should know what is communication, it is the expression of our ideas or emotions. But this definition has its limitations since animals too communicate their ideas and emotions by means of gestures which include staring, making sounds, crying and stamping their feet. Communication can be both oral and written. Since here we are dealing with technical report writing. Written communication becomes our main concern. Often one may have a query as to what makes any writing technical?

- 1) Is technical writing full of jargons?
- 2) Has it got a technical grammar or construction?
- 3) Does it deals with only technical matters?

A letter, an e-mail, an article, a story, a poem all may not be technical. But they become technical if they serve a specific requirement. A technical writing, then is a writing desired to meet specific goals. Killingsworth and Gilbertson define it saying "technical writing" aims to get work done, to change the people by changing the way of the things they do.

## Features of technical writing

- 1) We write many letters, resumes, e-mails for job applications. Imagine one of your friend sent his resume to a reputed firm for a job but failed to get any response. We may come across many such instances now a days.
- 2) A written document has to be clear, concise, well-organized

- 3) Technical writing must be appropriate for the audience ,who can be general audience ,business people, or a specialized group of engineers and scientist.
- 4) If the writing style , vocabulary, formation of sentence does not fit the audience technical writing will be hard to understand .
- 5) Technical writing must be as brief as possible . It is also important to know the importance of technical writing, to achieve success in professional writings.
- 6) There are many types of writing with different purposes., which provides more information and directions to meet the organizations goal.

## II. USES OF TECHNICAL WRITING

Now a days technical writing is found everywhere, for example instructions of all sorts are the good examples of technical writing.

- 1) When you want to apply for the job, you will able to prepare your own resume.
- 2) Lab reports are also a type of technical writing .
- 3) Giving driving directions is also a type of technical writing which provides point to point instruction.
- 4) When you want to know about a product you will go through the instruction manual which is a technical writing.

## III. SPEAKING SKILLS

The most effective way of communication is speaking skills ,which can help you in all aspects in your life .Having good vocabulary ,wide range of English skills will assist the students to acquire a good job ,or to communicate with others at work place or institutions. Good speaking skills will provide the students more options in jobs like sales, business, teaching, communications management , administration, law, industry, marketing, customer services etc., all this aspects depends on excellent speaking skills.

Speaking does not only involves in vocabulary , it consists volume ,pitch , intonation, cadence, voice of modulation, pronunciation and articulation.

In present day professional situations, it is quite common for every individual to speak in the public or to give presentation of a project at the work place .As you move up the ladder in the society, numerous occasions arise when you will be asked you to speak. In the professional life, there will be seminars , conferences , workshops , presentations, etc.,

where you may be an invited speaker. So, all these speeches requires a lot of preparation to speak before public without any fear in mind.

### How to improve students speaking skills

Speaking does not aquires unless until the learner begins to speak. Speech is the most organized and substantial part of communication. Pronunciation of words must also be done in proper manner. There are different terms associated with speech.

- 1)volume
- 2)Pitch
- 3)Intonation
- 4)Pronunciation.

A good speaker knows how to arouse interest of the audience and sustain it. Some of the following points should be keep in mind if the learner want to be an effective speaker.

- 1) The learner must try to find out about the audience. You should know their level , and what they want to know from you.
- 2) The first impression created by speaker is very important ,so he / she should concentrate on their dress and body language.
- 3)The speaker should keep his/her voice audible so that the listener should not crane their necks and strain their ears to hear the speakers voice.
- 4)The pitch , tone, intonation should be clear and appropriate.
- 5)The speaker must articulate the words clearly and must not speak in a sluggish manner.
- 6)As a public speaker ,must of sense of humour and also make effective use of relevant facts.
- 7)Be alert that you are always speaking in positive terms about the visiting nations, culture, and university.
- 8)Speaker must be carefull of not hurting others ,even inadvertently about the social , cultural, religious, or sentiments of the audience.
- 10) Body language like gestures, postures, eye-contact, smile ,voice are all important attributes of a public speaker.

## IV. LISTENING SKILLS

Listening is a very much neglected skill, yet you will find it to be a much desired skill in your working life. A research study revealed that business people spend almost 45% of their working time in listening. The students will spent 70 % of their time in listening. According to the Morris (1968) listening and reading skills are receptive skills in the sense that the language user receives the information from the written or spoken form. Listening skill is the first language skill learned

by the child from the surroundings. The child listens and picks up the words to speak, so the listening plays a major role in learning process. Listening skills involves in five stages.

- 1) Receiving the stimulus
- 2) Interpreting the message
- 3) Evaluating the message
- 4) Responding the message
- 5) Acting upon the message

#### Traits for good listening

- Identifying the important facts
- Paraphrasing for better understanding
- Asking questions for clarification
- Focusing on the speaker words

#### Common barriers and obstacles to listening

Many things give space for barriers or obstacles in listening. Active or good listener should know this barriers and how they can be overcome them. According to the communication skill research, we understand only 1/2 of what we hear and after a period of two months we recall only 1/4 of what we heard. We spend 67% in verbal communication and we spend only 48% in listening. So there is no communication skill more important than listening. So, the students must focus on the listening to achieve their success. Some of the common barriers are listed below-

- 1) Not focusing on the objective or the speaker
- 2) More than one conversation at a time
- 3) Having predetermined ideas
- 4) Feeling unwell or tired
- 5) Previous experiences
- 6) Having a closed mind
- 7) Physical disturbances like noise
- 8) Failing to concentrate.

#### Tips for better listening

- Concentrate on the message given and block out all the competing thoughts
- Remove all the biases and maintain an open mind
- Observe non-verbal clues and listen between the lines
- Not unreasonably questioning the motives of the speaker
- Paying attention to nonverbal communication without discounting the verbal communication
- Not equating the listening with the silence
- To understand the every act of communication taking place in context or setting

- To stop listening something that horrific, wrong, or hazardedly foolish.

#### Listening skills in pharmacy practice

Listening involves understanding both the content of the information and the feelings being conveyed. The students of pharmacy should practice the effective listening in three steps-

- 1) Summarizing
- 2) Paraphrasing
- 3) Empathic responding

When a patient provides information during a medication history interview, it is necessary to understand and summarize the critical pieces of information. Summarizing allows to understand accurately about the patient medical history and add new information that they have forgotten.

Paraphrasing is the technique, that to convey back to the patient that he/she said. It is the process of recognition of the patient's attitude and feelings.

Listening well is not an active process until you convey what you have understood about the the patient or student or researcher and should not seem to be mechanical or artificial but rather should be natural. However, when the relationship is marked by empathic understanding it helps to establish effective way of communication.

## V. READING SKILLS

Reading is also one of the important skill among the four communicative skills. In the professional life everyone one have to read and gather information and process it effectively. The business or institutions world can range from e-mails, memos, pamphlets, manuals, advertisement, journals, reports etc.. We read every thing to gather information and also learn instructions and different purposes. Like listening reading is also not a passive activity. A good reader should understand the context and meaning of the word and should relate the sentence to each other and fits together in a meaningful way. There are four types of reading skills.

- 1) Skimming
- 2) Scanning
- 3) Intensive reading and
- 4) Extensive reading.

Skimming or skim reading , is when we read quickly to gather information without pausing and get details .

When we read a passage slowly and carefully and looking for some particular information is called as scanning . In this process the reader should also be aware of non – verbal signs in the text, like italic or bold, photographs, figures, bars, graphs, fonts, pointers etc.

Intensive reading is done when we want to know something thoroughly. For example a engineer or a scientist study intensively a particular aspect of work in order to make detailed analysis .

Extensive reading refers to reading broadly much and many books to get knowledge and to get general awareness. For example, a student may not intensively read about a particular technology or topic but may have fairly good knowledge about it because of reading modified books in number . so we can say that he / she has done extensive reading .

#### **Barriers to reading**

- 1) Lack of attention
- 2) Poor eye- sight
- 3) Weak vocabulary
- 4) Inadequate pre -reading preparation
- 5) Because of socio-political or cultural differences.

#### **Strategies to overcome barriers**

- 1) To overcome the weak vocabulary underline the difficult words and then consult a dictionary or better still try to understand the meaning by referring the ontext. And cross check with the dictionary.
- 2) After reading jot down the points and try to recall the sentences what you have read.
- 3) It is a good idea to skim the text before starting to read it
- 4) Try to use the background knowledge while reading the text.
- 5) One of the best strategies to adopted is ‘SQ3R’ technique i.e. survey ,question Read, Recall, Review. Which will establish a meaningful communication with the text.

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