**UNIT 1**

**Effective Technical Communication**

**Definition:**

Technical communication is a process of sharing information through various modes with a specific audience for a specific purpose. It involves the delivery of clear, consistent, and factual information, often stemming from complex concepts. Technical communication is a user-centered approach for providing the right information, in the right way, at the right time so that the user’s life is more productive.

**Importance of Technical Communication:**

In today’s workplace writing is a ‘threshold skill’ for hiring and promotion among the salaried employees. Technical communication is a significant factor in the work experience of an employee for several reasons. Business Technical communication is not an occasional endeavor. It is a major component of the work environment. Through technical correspondence, employees

• Maintain good customer–client relations (follow-up letters).

 • Ensure that work is accomplished on time (directive memos or e-mail).

• Provide documentation that work has been completed (progress reports).

• Generate income (sales letters, brochures, and fliers).

 • Keep machinery working (user manuals)

• Ensure that correct equipment is purchased (technical descriptions).

• Participate in teleconferences or videoconferences (oral communication).

• Get a job (resumes).

• Define terminology (online help screens).

• Inform the world about a company’s products and services (Internet Web sites and blogs)

The value that technical communicators deliver is twofold:

1. They make information more usable and accessible to those who need that information
2. They advance the goals of the companies and organizations that employ them.

The following examples show the value of technical communication with respect to the products and services that technical communicators provide:

* Technical procedures and illustrations that clarify steps and identify parts of a product allow users to focus on getting tasks done efficiently, accurately, and safely.
* Training and instructional materials that teach people new skills make them more employable and productive in their organizations.
* Medical instructions that are informative and comprehensive ensure regulatory compliance and help patients and care providers manage treatment, improve health, and reduce the costs and risks associated with care.

Well-designed websites that are user-focused make it easier to find information and increase user traffic and satisfaction.

**Objectives of Technical Writing:**

Technical communication happens when professionals discuss a topic with a specific purpose with a well-defined audience. Technical communication usually has the following objectives:

* To provide organised information that aids in quick decision-making
* To invite corporate joint ventures
* To disseminate knowledge in oral or written form.

**Aspects or requirements of Technical communication:**

Technical communication is a transmission of technical and professional information from one individual or group to another. The three important needs of effective technical communication are:

1. Subject competence: It is the possession of appropriate knowledge of a particular technical subject matter as well as the possession of highly sophisticated technical or professional skills. An inadequate background in the subject or lack of information may lead to incomplete and ineffective communication.
2. Linguistic competence: It is the possession of appropriate language skills and the ability to present scientific facts or information clearly and objectively.
3. Organisational competence: It is the ability to organise the technical information in a logical and structured way. It includes several skills such as the ability to sequence thoughts in a sentence, organise a paragraph according to the needs of the reader and the topic, use appropriate logical ordering and provide thematic coherence to expression.

**Elements of Technical Writing:**

The ability to communicate clearly is the most important skill engineers and scientists should have. Best work will be lost if it is not communicated appropriately. So essential elements are to be considered while writing Technical Communication.

* Presentation and Tone
* Number, Voice and Tense
* Conciseness
* Unambiguity
* Accuracy
* Clarity
* Sentence Length
* Paragraphing
* Use of Acronyms

**Types of Technical Communication:**

Technical Communication is categorized into two specific types – Oral and Written.

  **ORAL** **WRITTEN**

Face to Face Communication Technical Reports Telephone Conversations Industrial Reports

Seminars Project Proposals

Conferences Business Proposals

Instructions Project Reports

Presentations Lab Reports

Group Discussions Synopsis

Interviews Thesis

Voice-Conferences Dissertations

Video-Conferences Abstracts

Casual Conversations Research Papers

 Formal Conversations Scientific Papers

Social Interactions Business Letters

Public Speeches Faxes

Announcements Electronic mailing

Radio Memos

Television Programs Notices

Speeches Online Documents

News Reports Circulars

Small talks on local topics Agenda

Negotiating Social Situations Minutes

Conversation tasks in a given Social Milieu Bulletins

Asking for opinions Brochures Expressing general comments,

criticism, objections, doubts Manuals

Agreeing and disagreeing Journals

Seeking / giving suggestions Technical Abstracts

Stating points of view Job Applications – CV’s

**Characteristics of Technical Communication:**

Technical communication is a broad field and includes any form of communication that exhibits one or more of the following characteristics:

* Communicating *about technical or specialized topics*, such as computer applications, medical procedures, or environmental regulations.
* Communicating *by using technology*, such as web pages, help files, or social media sites.
* Providing *instructions about how to do something*, regardless of how technical the task is or even if technology is used to create or distribute that communication.

Technical Communication has seven major characteristics, and these are shown below :

* Addresses particular readers. It communicates precise information about a technical matter to a precise audience for a special purpose.
* Helps readers solve problems
* Reflects an organizations goals and culture
* Is produced collaboratively
* Uses design to increase readability
* Consists of words or graphics or both. The graphics and words used are meant to be realistic. These writings are more factual.
* A majority of professional writing includes reviewing, correcting, and enhancing existing records, not producing new documents.
* Is produced using high tech tools

**Characteristics of General Communication**

General Communication is “to tell a story or give a description in detail.” This is far different from Technical Communication, where a technical writer probably will not tell a story, but would more likely just gives the facts.

* Type of reader is not specific. The general writing may be designed either for a general audience or for special readers.
* General writing can include articles, blog posts, website copy, grant proposals, business copy etc
* Is not produced collaboratively
* Does not use design to increase readability
* Is produced using low tech tools
* The general writings are less factual

**Difference between General Writing and Technical writing**

GENERAL :-

1) Contains a general message

2) Informal in style and approach

3) No set pattern

4) Mostly oral

5) Not always for a specific audience

6) No use of technical terms or graphics

TECHNICAL :-

1) Contains a technical message

2) Mostly formal in style and approach

3) Follows a set pattern

4) Both oral and written

5) Always for a specific audience

6) Frequently involves jargons, graphics etc.

**Being Relevant and the Art of Selection:**

Writing is about decision-making. When you write, your mind will be constantly asking itself questions; what you write will be your answers to these questions. Many of these questions will be concerned with the content of your work ( What to include and what to leave out ? Have I said everything that I wanted to say ? ), and many will be concerned with its form ( Is that idea adequately expressed ? Is that word the best word ? ) Such decisions are based on two very important and interrelated concepts :

**Relevance and Selectivity**.

What you choose to say will be governed by the task you are trying to fulfil by writing: everything which contributes to the fulfilment of this task is relevant; everything which detracts from it is irrelevant.

So, it is vital to develop the skill of judging relevance. It is important when writing to ask yourself again and again ‘Is this relevant ?’ which means ‘Does this sentence contribute to the fulfilment of the task I am trying to achieve ?’

**Features of Technical Communication:**

The acronym ABC denotes the three basic features of technical communication:

* Accuracy
* Brevity
* Clarity.

**Accuracy:** The basic feature of technical communication is Accuracy, which includes *accuracy of information* as well as *accuracy of expression*.

**For accuracy of information** – before writing a technical report or giving an oral presentation all the facts that need to be included in the report / presentation should be carefully checked and recorded for accuracy and appropriateness. Any factual error will put a question mark on the reliability of the Report / presentation and reduces its effectiveness.

**For accuracy of *expression*** - while making a professional presentation, or taking part in a conversation, meeting, or discussion a careful review and revision of the draft is mandatory to avoid errors of grammar, spelling, punctuation or usage. For a professional and technical communicator, accuracy of pronunciation, accent, intonation and non-verbal mannerisms is essential too. Accuracy of expression also demands ‘Precision’ in the use of words, phrases, sentences, and paragraphs, to avoid confusion or misunderstanding to the reader / audience.

**Characteristics of Precision:**

Precision is the quality of being exact, accurate and definite. Words are the symbols of ideas and ingredients of thought. Words shape thought and help us to organize ideas and facts into larger units. Precision demands usage of simple, correct, familiar, precise, appropriate and concrete words instead of vague, abstract difficult and unfamiliar words, clichés and technical jargon; Being precise helps us in attaining exact correspondence between the matter to be communicated and its presentation.

**Techniques of Precision:**

To make the expression precise and exact include using

* Simple and familiar words : Simplicity is an art and it is not easy to be simple. Using easy, simple and familiar words demand a better understanding and command of the language. It helps the reader / listener to understand the message transmitted. Understand that difficult words and phrases are barriers to effective communication

Example :

Difficult - Simple

 Abandon : Give up

Colloquial : Informal

Tumultuous : Noisy

Whiff : Breath of air

* Exact Words and Phrases : The technical communicator must have an exact knowledge of the meaning of words and phrases, and should avoid using confusing words.

Example :

Confusing words - Meanings

Advise / inform : to give advice / tell

All together / altogether : united / thoroughly

Complement / Compliment : something that completes / e expression of praise or recognition

Forward / foreword : to advance / introductory remarks

Stationary / stationery : not moving / writing materials

Avoiding Difficult Words and Complex Jargon: Technical Jargon is an integral part of technical communication but using too much jargon, which the audience may not understand, will be inappropriate. Before using specialized vocabulary and terminology, one must try to consider whether the audience has

* Sufficient education
* Considerable knowledge of your subject, and
* The ability to understand the technical details that you want to give

**Checklist for Achieving Accuracy and Precision:**

* Check facts for accuracy of information
* Revise your draft for grammar, usage, spelling and punctuation errors
* Take care of your pronunciation, accent, intonation, and non-verbal mannerisms during oral communication
* Use simple, familiar and exact words
* Avoid difficult and unfamiliar words
* Use words carefully with proper discretion
* Avoid excessive jargon

**Brevity:**

One must try to be as brief as possible and give maximum number of words possible, i.e., being brief but comprehensive in expression. A document can be made brief and concise by avoiding wordiness and repetition.

* Avoiding Wordiness : Wordiness normally results from the desire to impress the reader with learning, language skills or intellect by substituting words for thoughts.

Example :

Phrase - Word Substitution

 At a low ebb : exhausted

To beat about the bush : digress

Blow one’s own trumpet : self-praise

From the bottom of one’s heart : earnestly

Throw dust in the eyes of : cheat

* Avoiding repetition : An idea or a fact is repeated in the writing and speech of people because they want to be forceful but one should always remember that brevity cannot be sacrificed for eloquence in technical writing or a professional speech.

Example :

Word Style : A computer performs several important functions, which include performing fast and accurate calculations. ( Number of words : 13 )

Concise Style : A computer performs fast and accurate calculations.

( Number of words : 07 )

Word Style : Computer network is a unique system of networks, including a chain of computers connected to each other for the purpose of communicating information to one another. ( Number of words : 26 )

Concise Style : Computer networks include interconnected computers, which communicate information to one another. ( Number of words : 11 )

Checklist for Conciseness :

* Avoid repetition
* Avoid using wordy phrases and expressions
* Do not include unnecessary details
* Revise your document thoroughly in order to make it concise
* Avoid exaggeration

**Clarity:**

Clarity in communication is the quality of being unambiguous and easily understood. Clarity can be achieved by using direct language, specific and concrete words and clear expressions. It is an art of making the meaning more clear to the audience and it is essential to understand the audience before communicating with them. Audience analysis can be done by understanding their background, subject competence, linguistic competence and familiarity with the topic or content of your communication can help you in audience adaptation. Clarity involves both clarity of expression as well as clarity of thought.

Techniques of being more clear include:

* Using direct language :

Technical communication is concerned with the description, narration, explanation and analysis of facts. In simple words it has to give a matter-of-fat account of the research carried out by the presenter. There is no scope for roundabout constructions, indirect expressions, exaggerations, artificial eloquence ornamentation, literary devices like imagery to express abstract feelings, or rhetoric charged with emotion.

* Using Specific and Concrete Words and Expressions: Readers and audiences respond more predictably to concrete language. Usage of concrete and specific words and phrases bring vividness and clarity, as they tend to be specific, narrow and particular, thus ensuring limited interpretation and reducing the risk of confusion and misunderstanding.

On the other hand, obscure, abstract and vague words and phrases confuse the audience as they do not convey the exact meaning, by creating ambiguity and leads to incomplete or mis-communication.

Example: Examine this sentence : “I’ll contact you later”. What does the speaker mean by the word ‘Contact’? Will he call, send an email, write a letter or make a personal visit ? What does the word ‘Later’ mean ? Does it mean next week, next month or next year ? A better version of this sentence would be : I will visit your **office** on Monday, or, I will send you an email next week.

Checklist for Achieving Clarity :

* Do not use indirect expressions.  Use specific words and phrases.  Avoid exaggeration, artificial eloquence and ornamentation.

**Technical Style:**

Style in Technical Communication is the way one speaks or writes to convey technical communication. Style is a major consideration as it refers to the way something is said rather than what is said. It is the distinctive mode or manner of expressing ideas in language by choosing appropriate

* Words and phrases ( formal, informal, technical and so on )
* Sentence structure ( simple, complex, compound, mixed and so on )
* Sentence type ( affirmative, negative, questions, question tags and so on )
* Rhetorical devices or discourse writing techniques with linear logical organization ( description, narration, explanation, comparison and contrast and so on )
* Effective logical structure and organization.

**Style in communication largely depends on factors like –**

* The audience – to superiors the message is passed more diplomatically and tactfully, a more direct and forceful way is used for the subordinates
* The communicative context – conveying routine information or making requests, conveying good will or trying to persuade
* The purpose of communication – the way good news is conveyed is not the same as the bad news

Thus, keeping the language simple, direct, factual and precise, with no use of decorative figures of speech or roundabout expressions, Style in technical communication may refer to the way a person puts words together into sentences, arranges sentences into paragraphs and organizes paragraphs to frame a piece of writing or an appropriate oral discourse to convey technical communication clearly and accurately.

**Summary:**

The sole purpose of technical writing is to educate and inform.

Technical writing documents aren't intended to be entertaining or convince individuals about the merits of a specific product. Instead, they are designed to educate readers about a specific technical subject or provide instruction about a process. Assembly instructions, for example, are strictly "how-to" documents - they don't discuss the benefits of the product or why it is superior to similar products in the market.

Technical writing does not involve expressing opinions or emotions about a topic.

Technical writing is completely objective, and there is no room for the author to express her thoughts or opinions about the material being presented. Technical writing is all about facts, and these must always be presented in a clear and concise manner. The author cannot let his or her opinions influence the contents or the tone of the document.

Technical writing documents are geared towards a highly specific audience.

While some types of writing (novels, for instance) are designed to appeal to a large audience, technical documents are written with a particular audience in mind. Training materials for a company, for example, are written specifically for employees, while help files are written for users who have purchased a certain piece of hardware or software. Being familiar with the intended audience and writing the document for that audience is absolutely essential if an individual hopes to create a highly effective piece of technical writing.

Technical writing requires in-depth research and extensive knowledge.

It's not enough for a technical writer to have a general idea of the topic he is writing about. The technical writer must be able to prepare a document that focuses on the exact topic being addressed or process being discussed. Readers must be told about how to use the specific machine in their place of employment or how to install the exact make and model of printer they purchased.

**Important Aspects of Technical Communication:**

* Clear communication
* Legible
* Very well structured, using standard templates as far as possible
* Concise and simple to understand for readers
* Accurate — no scope for fiction
* Comprehensive — complete in itself
* Commonly understood words with unambiguous meanings
* Precise terminology
* Careful attention to grammar, punctuation, and usage
* Complete explanation
* No gaps in logic or flow
* No assumptions the user will know or understand something (unless this is expected by all users)
* Visual representations of written or verbal descriptions
* Highly organized
* Several heading levels
* Parallel construction
* Use of best practices in presentation