



Matrusri Engineering College

(An Autonomous Institution)



(Approved by AICTE & Affiliated to Osmania University & NBA Accredited)

Common to All Branches

Subject : Effective Technical Communication in English Name of the Faculty: Mrs.K.Mrunalini

LECTURE NOTES

UNIT-1

E-content link of one of the reference books titled “Technical Communication: Principles and Practice” by Sangeeta Sharma and Meenakshi Raman is given below:

https://archive.org/stream/RamanMeenakshi/%5BRaman%2C_Meenakshi_djvu.txt

EFFECTIVE TECHNICAL COMMUNICATION

UNIT -I

Communication with Definition and Diagram

Communication is an effective part of the world. Basically, the process of communication is an effective part that's very important for us. It is a part of sharing and creating different ideas, views, feelings, information etc. among the people to build up a good relationship.

A person can be good qualified and has a good skilled but, if he doesn't possess effective communication skills, so, he won't go multinational work and his work can be irrelevant of process

Communication Process

Definition: Communication is a system that we face or doing daily life by the business, contact with others, in any official work etc. Normally, it is the act of transferring any information from one place, group or person to another. We communicate by that process it's called **Communication process**. It is the key of developing any function, management or any event.

8 stages of communication process

There are 8 types of Communication process. The process of communication refers to the show of information or message from the sender done a selected channel to the receiver overpowering barriers that affect its pace. Now, see the 8 stages of communication process.

1. Sender
2. Message
3. Encoding
4. Channel
5. Receiver
6. Decoding
7. Feedback
8. Noise

It is a continuous system which mainly includes three elements like sender, message, and receiver.

Advertisement

But, actually, it's the 8 types to be completed in a communication process. Let's see details about the processing.

The Process of Communication

1. Sender

The communicator generates the message and imparts it to the accepted. Sender is the first source of process in communication.

2. Message

It is the information, view, topics, idea, feelings, sensitivity etc. that is produced by the sender and is then planned to be communicated more.

Besides, some topics are included in message like Introduction, Meaning, and Importance of Directing

Fundamentals of Direction

Leadership

Incentives

3. Encoding

After generating message by the sender is encoded Representative like as in the form of pictures, gestures, words etc. earlier it is being took.

4. Media or Channel

It is the middle part of the communication process. Basically, the message may be conveyed in writing. For communicating includes some important media like internet, [telephone](#), e-mail, post, fax etc.

5. Receiver

It is the opposite party of communicating. After, sending writing message then it's encoding by the multiplexer via channel then come to receiver. Then, the receiver receives the message and it in proper outlook and acts giving to the message. Basically, the purpose of communication will be success when receive message by the receiver.

6. Decoding

Decoding is the process of adapting the symbols encoded by the sender.

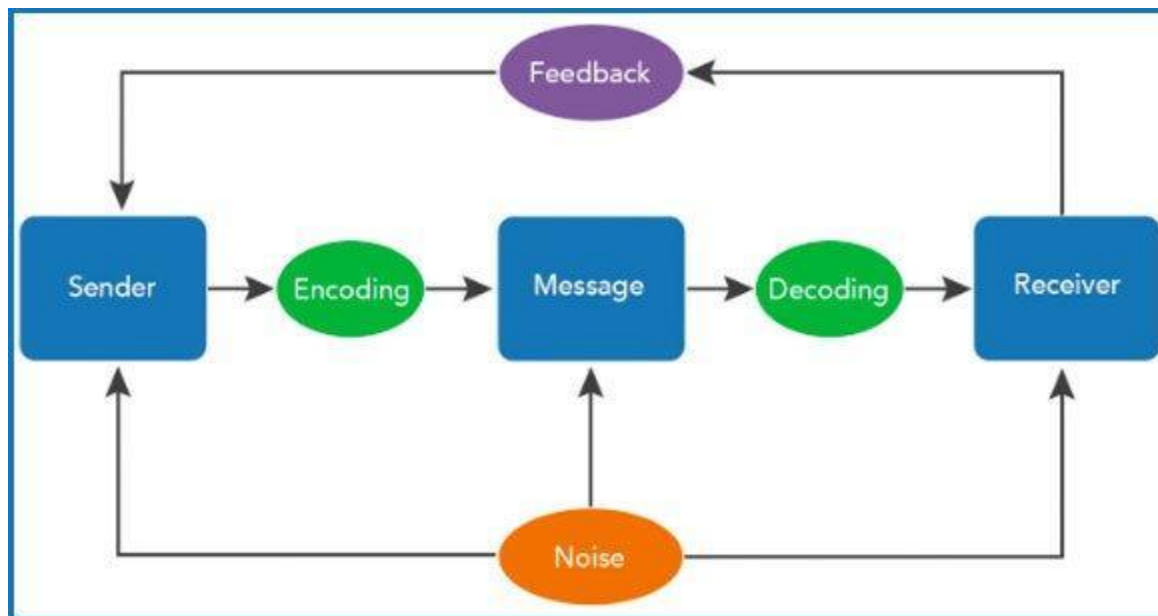
7. Feedback

When the receiver confirms to the sender message that he has received and understood it carefully, actually, the communication process is completely done.

8. Noise

Noise is any type of disruption that interferes with the interpretation of information from the message sender. We can say it's example bad telephone connection, faulty encoding, inattentive receiver, poor understanding of message, internet connection loading, due to prejudice etc.

Block diagram of Communication process



Communication process diagram

Importance of Communication process

- **Confident Working**

Before working a manager or CEO of an office when talk to others must have to work confidently. This coordination is not possible without actual communication.

- **Co-ordinate with others**

The manager explains to the employees the goals, modes of their success and the social relationships among them. Basically, it's provides coordination between many employees and also sections.

- **Social communication**

Everyone can communicate with others generally if they can do good communication. In generally we can communicate with others in the whole world via social sites like facebook, skype, imo and also.

- **Increases Managerial Ability**

The managing director conveys the targets and assigns jobs to the assistants. All of these features involve communication. So, communication is important for the quick performance of the managers of the faculties or company.

Besides, there are more [importance of Communication](#). In fact, without communication we can't ran any day in the world. We have to know **process of communication** for increasing our business and official management. Comments bellow if you have any query.

What are Communication Barriers?

Communication barriers are internal and external factors which impede the quality of communication. They act as hindrances in the listening or speaking aspect of communication; thus distorting its real nature and leading to misinterpretations and misunderstandings.

The process of communication goes through various barriers; each of them affecting communication in different ways. What type of communicational barrier did Nicole and Petra face? Let's find out!

Types of Communication Barriers

The barriers to effective communication come in many ways. Some are much apparent and some are so subtle yet significant. These barriers are classified based on their nature such as physical barriers, psychological barriers, cultural barriers, language barriers, semantic barriers etc.

1. Physical Barriers

Physical barriers are any kind of physical or environmental factors that hinder communication from taking place effectively. These are obstacles present in the environment which makes communication a difficult task to pursue.

Some of the most common [physical barriers](#) are [space-proximity](#), noise, time, place and medium etc. These factors can sabotage the value of communication as they can affect one's ability to efficiently process and interpret information.

The COVID-2020 Pandemic-many people find it difficult to work from home since the network issues are found to be common in rural and remote areas. Also, not everyone's home can be a good ambience for the job. It even makes the job so hectic.

It's better to make a private workspace that is free of noise disturbance and other interruptions. Distractions such as using social media, and games on phone may suck up your valuable production hours.

Ways to avoid /reduce the barrier

Based on the specific problem at hand, measures can be adopted to work with them and reduce them during communication to a great extent.

- Using novel technological developments such as telephone calls, e-mails, Whatsapp, Facebook etc helps to a greater extent in reducing the distance in [interpersonal communication](#). Since it helps in the instant transfer of messages.
- Always choose a good ambience that perfectly suits the type of meetings (formal and informal) where there is a lesser crowd, lesser noise and better ventilation.
- The congested place with inconvenient old rickety items of furniture, poor lighting, and misaligned workstation are some of the factors that ruin the conversation, especially in an organization.
- Setting a particular time for the board meeting, group discussions, feedback sessions etc., separately can minimize the misinterpretation of the flow of information within the organization. i.e., communicating one thing at a time.
- Make sure the reception and help desks are always open and have ease of access for any employee in the office. Since it helps in immediate doubt clarification and aids assistance instantly for a candidate.

2. Psychological Barriers

When the [effectiveness of the communication](#) gets hampered due to the psychological states of the sender or the recipient, it can be termed as [psychological barriers of communication](#).

As humans experience various complex feelings and emotions like anger, depression and stress, mental states and disorders, drowsiness, fatigue, frustration, excitement, boredom, disinterest, nervousness etc. are some of the aspects of psychological states that can act as pawns or portray as interference in making communication efficient.

Other psychological factors would include states such as defensiveness and lack of self-esteem. When a person is defensive, they tend to block out the opinions of others and make communication a one-way process.

On the other hand, a person with a poor sense of self would avoid expressing their views believing that they would make a fool out of themselves. Hence, their contribution to the conversation becomes very less to nothing at all.

For example, although Kiara was surrounded by people discussing her favorite topic “world religions”, she kept to herself because she believes she would embarrass herself somehow by saying the wrong things.

Ways to avoid /reduce the barrier

- Make sure you and your opponent are mentally prepared for the conversation.
- Watch out for the bodily cues of the receiver and try to understand the level of interest and readiness to receive the information. It’s always good to have an open and honest inquiry about their physical and mental state before you proceed.
- For example, when Trisha was starting to talk about her rude boss, Katy informed that she was not in the mood to listen but promised to hear it all out when she felt better.
- The sender should be sensitive to the mindset of the receiver. For example, talking to a person with anxiety about different anxiety-provoking situations may not be the best thing to do.
- Acknowledging the thoughts and ideas of the speaker to make them feel validated. This may help establish interpersonal relationships also.
- It’s always better to keep quiet while you are angry. Anger and haste hinder good counsel.

- Barriers such as anger can be dealt with by practicing relaxation techniques such as breathing exercises and grounding techniques.
- Sometimes feeling overwhelmed could be another barrier to communication. This can be tackled by either informing the speaker about it or choosing to take some time out to recharge.

3. Cultural Barriers

Jay is an exchange student from India. When he met the people of Canada for the first time, he was thrilled about being in a new country and witnessing a new culture. Although he enjoyed his stay, with time he found it difficult to get along with people and experienced intense culture shock. He realized that the culture that he came from was far different from what he is experiencing now.

When the effectiveness of communication gets affected between people due to differences in the cultural background, this can lead to the [cultural barrier](#). Some cultures are very formal in their interactions with people whereas other cultures are much more informal. Such differences can result in awkward and offensive situations.

Often, people hold certain beliefs about some cultures. These beliefs influence interactions with people from different cultures and this can be a major barrier.

Ethnocentrism is another barrier where a group of people experience a sense of perceived superiority over their cultural, religious, and ethnic backgrounds over other cultures, religions and ethnicity. When such beliefs are held strongly, it hinders the way of effective communication.

There are three different issues related to [cross-cultural communication](#).

1. **Word connotation:** This can be a major problem in cross-cultural communication as one word may mean two different things in two different cultures. So this can lead to misinterpretations. For example in Japanese, the word “Hai” refers to “I’m listening” rather than “Yes, I agree”. So during negotiations, this could be giving wrong messages.
2. **Semantics:** When translating words from one language to another, the meaning might slightly differ, or it might be viewed from a different light. For example, for words such as efficiency and free market, there is no direct translation in Russian.
3. **Tone differences:** Some cultures adopt a formal way of addressing people and other cultures use an informal tone of language. In other cultures, the tone differs based on context. Hence, using an inappropriate tone of language might be embarrassing and even offensive.
For example, in a country like America, people are usually loud and assertive in the way

they interact. However, in a country like Japan, people are generally soft-spoken and always put the needs and the demands of others first rather than their own. Such a difference could be because the Japanese preserve their collectivist culture whereas Americans hold on to their individualist culture.

Ways to avoid /reduce the barrier

- If you are an expat who works globally or in an MNC or simply a tourist, gaining an intercultural awareness is an inevitable quality. Since it prevents you from offensive acts, violating public rules, etc.
- It is better to assume differences than similarities. So instead of doing things the indigenous way, it can be kept more respectful and formal as that would save a lot of trouble and embarrassment.
- Before jumping to conclusions, it is better to understand their behavior from a cultural context rather than just the situational factors.
- Be empathetic to the person on the other side on account of their cultural differences, educational background, ethnicity etc.
- Give people the benefit of doubt and consider your observations as nothing but a hypothesis and look out for facts to support your beliefs.
- Using hand gestures and actions, sign language can come in great help of mutual understanding between foreigners who do not speak the same language as you.

4. Language Barriers

Have you ever spoken to a foreigner? Or with the one who doesn't speak your language? Recall how difficult it was then. Due to varying factors such as literacy rate, age, ethnic background etc., the proficiency of language might differ from one person to another, and this can act as a [linguistic barrier](#) to the smooth flow of communication.

Language is considered the ultimate resource for communication. Yet, there are famous personalities like Lewis Carroll who suffered from Autism and stammering and still told many stories that people across the globe read and admired. He became a part of every child's happy childhood.

As shocking as this may sound, the current American president Joe Biden was once a victim of a speech impediment. He had severe stuttering as a child and went through years of bullying until he decided to help himself and get over it once and for all.

Ways to avoid /reduce the barrier

- Using more complicated words and technical terms, jargon can make comprehension difficult.
- Incorporating relevant [body language](#) such as hand movements can be helpful.
- Using visual methods of communication can fulfil the purpose.
- Avoid ambiguity and verbosity for simple, precise, and clear written and oral communication.
- Apps like language learning and translators can help you a lot in the situation of being a remote worker and a traveler.

5. Technological Barriers

Although technology has made communication much easier, there are also newly emerging issues that must be addressed such as outdated technology systems, lack of proper network connection, issues with the devices etc. and other secondary issues such as computer viruses, a packed inbox, emails being saved in outboxes rather than getting sent. These issues may come to interrupt the way of having effective communication.

In recent times, the global pandemic has pushed the mode of communication to tech-based mediums, and it has never been as facilitating. Technology helped with the easy access to resources, helplines, availability of human resources etc. and made the entire journey less gruesome than otherwise.

Ways to avoid /reduce the barrier

- Updating the systems at regular intervals, installing tools and accessories such as anti-virus to maintain the good condition of the devices.
- Adopting new digital communication software such as Zoom, Meet, Team etc. to effectively streamline engagement.
- Providing proper training about the software installations, equipment handling and machinery operations to the employees must be made mandatory. These issues can ruin the communication at every level between colleagues and leads to loss of productivity.

- As schools and universities have shifted to online mode of tutoring, along with it comes to the issue of technical issues such as lack of proper connection, video and audio issues, software malfunctions etc. and other issues like lack of knowledge about software operation etc. these issues can be handled by conducting formal seminars and presentations where students and the instructors are taught about the entire operating functions of the software and computer systems.

6. Organizational Barriers

Although communication is a crucial part of an organizational setup, such an environment also witnesses its share of barriers that prevent communication from taking place successfully. Some of the issues faced in an organization are the complicated structures, the hierarchical positions, facilities within the organization, feelings of fear and nervousness when meeting a superior etc.

For example, Delta is a top MNC company where more than 5000 employees work. In one of the branches, the employees are facing issues with Google assistants across all the departments for quite a few weeks. Since it had been helpful in the quick retrieval of information, this has caused a lot of delays in the submission of work and caused issues in the flow of communication among the employees within the organization.

The employees put it across to the superiors only to find no action being taken towards this. This leaves the organization with a bunch of annoyed employees and a truckload of pending work.

The superiors aren't taking it to the managers because they are currently working on downsizing the organization. Any kind of negative remark on the side of the employees would result in immediate termination of employment. Hence, the manager must put across the issue in the politest manner possible.

The power consciousness felt among the employees and the debilitating fear of losing the job affect how the information is conveyed to the authorities. The team leads were in the place to filter down the information to a simple outline rather than an elaborate explanation to avoid meeting with unpleasant consequences.

This case can be an example of the issue in vertical communication and also the differences in positions within an organization.

Ways to avoid /reduce the barrier

- The number of hierarchical levels can be reduced as that would ensure a smooth flow of communication between superiors and subordinates.

- The technological and other required facilities can be levelled up to facilitate communication within the organization.
- Organizations can create open, transparent channels for communication among every employee and managers within.
- Building facilities like suggestion boxes, and open portals accessible to every member of the organization can create room for everyone to engage in effective communication.
- Appropriate policies and rules should be established within the organization to enable effective communication.
- The organization should be designed in such a way that people can meet each other face-to-face and interact.
- The organizational structure should be given higher priority to practicality rather than aesthetics to ensure efficient communication among the employees and superiors.

7. Semantic Barriers

Juan: And that's how quantum physics works.

Tom: Whoa. That's a lot of information. But mate, it's all Greek to me.

Juan: What do you mean? I spoke in perfect English.

In this example, Tom used the idiom "It's all Greek to me" and by that he meant to say that the information was very complicated for him to comprehend. However, Juan didn't get the message.

This is an example of the [semantic barrier](#). It occurs when the meaning of a message is misunderstood or misinterpreted due to the lack of understanding of the language, or due to its nuances or the usage of complex sentences and vocabulary which makes comprehension difficult.

It also happens because of the use of technical jargon, bad expressions, words with multiple meanings, lack of information and sometimes even faulty translations.

Ways to avoid /reduce the barrier

- It is advisable to always use words which are simple, clear and easily understandable.
- Make sure to use a language which is commonly spoken by people.

- Be explicit about your information. Avoid sarcasm and coded messages.
- Improve your cross-cultural awareness to scale up your communication game.
- In case you're worried about misinterpretations, write the content down or send a formal e-mail to the respective person.

8. Personal Barrier

Personal barriers to communication are personal characteristics that deter communication from taking place effectively. Personal characteristics involve personality, social style, level of confidence, clothing, emotions, lack of knowledge etc. some personality types are more likely to be expressive about their thoughts and opinions in comparison to other types of personality.

For example, extroverts are sociable and talk about their inner thoughts without reluctance and on the other hand, introverts prefer keeping their thoughts to themselves rather than bringing them to light. Hence, such personality differences can act as a barrier to enabling effective communication.

Another personal barrier would be the lack of confidence. A person with low confidence would experience hesitation in expressing his views believing that he would be mocked or ridiculed, and this also hampers communication.

Clothing could be another factor that could turn out to be a clincher or a deal breaker. Hence, clothing in such a way that is irrelevant to the situation could act as a barrier to communication.

Some candidates show fear of authority, unwillingness to communicate in the workplace. They find difficult to express their opinions in situations including group discussion, board meetings etc.,

Ways to avoid /reduce the barrier

- Always adopt a socially acceptable stance when interacting with people.
- Master the art of [listening](#) empathetically.
- Learn to keep your emotions under control.
- Upscale yourself by gaining knowledge about the recent trends in different fields.
- Improve your vocabulary, confidence, sense of clothing and personality to feel competent.

9. Physiological Barriers

Physiological barriers occur when information cannot be passed on successfully due to the physical condition of the sender. The physical condition includes loss of eyesight, mental illnesses, physical illnesses, hearing and speaking impairment, even the learning disabilities like dyslexia, loss of memory, excessive fatigue and tiredness etc. these conditions may make communication a difficult process.

The most celebrated physicist Stephen Hawking suffered from a condition called Amyotrophic lateral sclerosis which paralyzed his muscles. This condition also affected his ability to speak. Yet, he managed to accomplish such astounding feats of discovery about the universe.

On the other hand, there is Louis Braille who lost his eyesight at a very early age. He invented reading and writing system for those with visual impairment. His invention has been the sole cause of many literates with visual impairment.

Many such great personalities broke the statement, “physical disability can be a hindrance for...”

Ways to avoid /reduce the barrier

- It is essential to be considerate of a person struggling with such physical conditions.
- Based on the condition of the receiver, devise a strategy to ensure information is sent and received successfully.
- Couple your [verbal information](#) with other mediums to make comprehension easy on their part.
- Emphasize your information and repeat them if necessary.
- People with impairments can handle difficult situations by using the assistance of technology. There are many features available in smartphones such as voice detection, Google Assistant and many applications that are designed to help people with impairment. For example, applications such as Supersense, Be my eyes work exclusively for people with visual impairment to find objects and navigate well.

10. Gender Barriers

Gender barriers to communication occur because of the differences like interaction and the expectations placed on each gender. Although men and women live in the same world, they tend to live parallel lives more than overlapping ones. The topics of interactions differ vastly between men and women.

Men's talk focuses on information, current affairs, competing, creating expertise and being assertive. On the other hand, women's talk throws light on offering emotional support, and fostering trust, bonds and loving relationships.

As both the genders differ in their way of addressing one another, they are always mistaken for being non-empathetic toward each other. But the fact is they just address in a way they believe would prove beneficial.

John Gray, in his book "Men are from Mars, women are from Venus" beautifully describes how the two genders differ in their way of handling stressors, interacting with one another, and solving problems.

Even during the process of decision-making, gender bias seems to play its role. It has been found in a study that women are more likely to take disadvantageous risky decisions compared to men in the face of a stereotype threat condition and when they greatly fear negative evaluation from others.

This explains why women go to a great extent to maintain relationships and give higher importance to the judgments of others, which men can never be found practising.

Gender prejudice is a phenomenon that makes its presence even in professional settings. Women are typically prejudiced to be capable of certain roles such as teaching, baking, designing, crafting, cooking etc. as these are considered "women's work". Meanwhile they are considered unfit for jobs that require physical strength and resilience.

Roles such as firefighting, beekeeping, astronomy, boxing etc. are reserved for men as women are too fragile for such roles. When such prejudices exist within the human mind, it prevents open-mindedness and respect for differences in opinions and hence affects communication immeasurably.

Ways to avoid /reduce the barrier

- The first way to reduce the barrier of gender in communication is to understand that men and women are two different people who communicate differently.
- Learn about the nature of both genders and address them accordingly.
- If the opposite gender doesn't welcome your response, try to modify it or ask them to suggest an alternative.
- It is also crucial to be alert to the subtle cues both the genders give out and plan your response accordingly.

11. Chronomatic Barrier

Of the many barriers to communication, time is an important one. Time can be a determining factor in the effectiveness of communication. Chronomatic barrier refers to the issues in communication because of time. Being able to send a timely message can have a better impact than sending something during an irrelevant period.

For example, a person sending a letter to someone, regarding an emergency which is only received weeks later. Such a barrier usually occurs as a result of physical distance between the sender and the receiver or even the differences in time zone between both the parties.

In some situations, the right messages are sent during the wrong timings. For example, an angry wife who is getting ready to go out asks her husband “How do I look?” and the husband replies “with your eyes”. This was a great comedy but delivered at a wrong time.

In the example, the wife meant to ask if she looked presentable, but the husband just took the opportunity to make a light joke out of it. However, considering the wife is already mad at him, the joke could’ve been saved for a better time.

“A justice delayed is a justice denied” is a famous saying that emphasizes the importance of a well-timed judgment. Some messages would lose their value and influence if not expressed at the right moment. Even if the message was sent out an hour or even a minute later, it may not produce the same kind of results.

For example, Ray and Zen are questioned about a stolen purse. Although Zen was the culprit, he claims himself innocent and this resulted in Ray being prevented from attending the exam the next day. Although Zen confessed his mistake later, Ray faced the consequences, nevertheless.

Ways to avoid /reduce the barrier

- To reduce the barrier of time, one can adopt less time-consuming novel mediums such as Whatsapp, Instagram, Facebook etc. can also be used in the instant transfer of messages.
- Be sensitive about the context and the demands of the situation. Make sure that your message is delivered is appropriate for the time and place.
- Be prompt about the medium of communication that you choose for your message to reach the appropriate timing. For example, an emergency message must be informed instantly through the phone rather than waiting to convey face-to-face.
- When talking to people from different time zones, look out for a time that wouldn’t interfere with their routine. Make pre-calculations about a time before you commence your interaction.

12. Wrong Choice of Channels

Sometimes a person may send an appropriate message yet choose the wrong channel to transfer and that ruins the efficacy of the intended message. The wrong choice of channel is a kind of barrier where an unsuitable channel is chosen to deliver an important message.

For example, an employee requests his boss for leave verbally rather than sending a formal e-mail or a letter stating his reason. Although the message is the same, when the employee chooses to break it down verbally, it shows a lack of professionalism on his part.

Variation in the channel helps the receiver understand the seriousness and the commitment to the message. Let's say that a manager wants to appreciate an employee for reaching the target of the month. The manager can either send an E-mail praising her for her commitment to the job or send a text message or come by her desk and appreciate her personally.

Which would have a better impact? It's quite apparent that the latter would be more appreciated by the employee as it shows the employer's genuine acknowledgement of her dedication and efforts for the organization.

Ways to avoid /reduce the barrier

- When choosing the channel for a message, the sender should be sensitive to the complexity of the message, the abilities of the receiver, the consequences of choosing the wrong channel and the immediacy of the action to be taken.
- The sender should consider his options and choose a channel that would be best suited for the message he intends to send.
- Complement the medium of communication through which the message was delivered. If your message came to you through e-mail, send your response through the same medium.
- In case of discussing important information through an online mode of communication, it would be recommended to have a small discussion personally regarding the same.

13. Attitude/Perception Barriers

Barbara comes from a dysfunctional family system where her father engaged in various forms of abuse. This memory from her childhood has been etched so strong that she believes all men are abusive and misogynistic (strongly prejudiced against women). This belief comes in the way during every casual interaction she has with men. She always comes home with the same complaint from men for being outright and insolent.

Attitudinal barriers occur because of pre-existing assumptions, beliefs and attitudes about specific topics. These beliefs prevent a person from being open -minded and accepting of other's perceptions and ideas.

These faulty beliefs can act as a barrier when communicating because they are narrowed down notions that are far from truth. Stereotyping can become a barrier when people act based on their beliefs and discount other's narratives.

When people hold strong opinions about certain aspects, they tend to perceive them selectively. This is where a person chooses to perceive what they want while ignoring the rest. So, holding a belief that all men are patriarchal, will only allow Barbara to search and find the patriarchy in men while ignoring every other positive attribute.

Ways to avoid /reduce the barrier

- ["Agree to disagree"](#) – We all come from different racial and ethnic backgrounds and so our beliefs about the world also differ. These views are nothing but distorted opinions. One's opinion may not necessarily align with that of others. So, we should learn to respect and accept differences in opinions and attitudes.
- Keeping our minds open to new thoughts, ability to see the world from other's lenses, and exchange and acceptance of true valid ideologies can save a lot of interpersonal disputes.
- Remember to mind your language and soften the tone. Always be assertive.
- Be honest and open straight forward in questioning and feedback.
- Engage in mindful communication where you are actively processing things you say and hear from the other side.
- Give people the benefit of doubt and not assume that everyone is torn from the same piece of fabric.

Other Barriers to Communication

Besides these important barriers, there are also blocks to communication that takes a toll on its effectiveness.

- Non-assertive behavior
- Personal bias

- Unexpected circumstances
- Task preoccupation
- Lack of feedback

These aforementioned factors could also disguise themselves to be obstacles to enabling effective communication. After learning these barriers, we can finally understand that various barriers that can affect the effectiveness of our communication.

In the example of Nicole and Petra, there were various factors such as noise, anger, perceptual issues etc. that played a notorious role in affecting their communication. It is essential to be mindful of these barriers and overcome them for a smooth communicational ride.

Dimensions or Methods of Communication

In an organization, communication flows in 5 main directions

1. Downward
2. Upward
3. Horizontal /Lateral
4. Diagonal
5. Grapevine Communication

1 Downward Communication: Communication that flows from a higher level in an organization to a lower level is a downward communication. In other words, communication from superiors to subordinates in a chain of command is a downward communication. This communication flow is used by the managers to transmit work-related information to the employees at lower levels. Employees require this information for performing their jobs and for meeting the expectations of their managers. Downward communication is used by the managers for the following purposes –

- a) Providing feedback on employees' performance.
- b) Giving job instructions.
- c) Providing a complete understanding of the employees' job as well as to communicate them how their job is related to other jobs in the organization.
- d) Communicating the organizations mission and vision to the employees.

e) Highlighting the areas of attention. Organizational publications, circulars, letter to employees, group meetings etc are all examples of downward communication. In order to have effective and error-free downward communication, managers must:

- Specify communication objective.
- Ensure that the message is accurate, specific and unambiguous.
- Utilize the best communication technique to convey the message to the receiver in right form

2. Upward Flow of Communication: Communication that flows to a higher level in an organization is called upward communication. It provides feedback on how well the organization is functioning. The subordinates use upward communication to convey their problems and performances to their superiors. The subordinates also use upward communication to tell how well they have understood the downward communication. It can also be used by the employees to share their views and ideas and to participate in the decision-making process. Upward communication leads to a more committed and loyal workforce in an organization because the employees are given a chance to raise and speak dissatisfaction issues to the higher levels. The managers get to know about the employees' feelings towards their jobs, peers, supervisor and organization in general. Managers can thus accordingly take actions for improving things.

Grievance Redressal System, Complaint and Suggestion Box, Job Satisfaction surveys etc all help in improving upward communication. Other examples of Upward Communication are -performance reports made by low level management for reviewing by higher level management, employee attitude surveys, letters from employees, employee-manager discussions etc.

3. Lateral / Horizontal Communication: Communication that takes place at same levels of hierarchy in an organization is called lateral communication, i.e., communication between peers, between managers at same levels or between any horizontally equivalent organizational member. The advantages of horizontal communication are as follows:

- a) It is time saving.
- b) It facilitates co-ordination of the task.
- c) It facilitates co-operation among team members.
- d) It provides emotional and social assistance to the organizational members.
- e) It helps in solving various organizational problems.
- f) It is a means of information sharing.
- g) It can also be used for resolving conflicts of a department with other department or conflicts within a department.

4. Diagonal Communication or crosswise communication: Communication that takes place between a manager and employees of other workgroups is called diagonal communication. It generally does not appear on organizational chart. For instance - To design a training module a

training manager interacts with an Operations personnel to enquire about the way they perform their task. The Accounts people of an organization visiting different employees in various departments for their IT calculation, bonus for workers etc. fall under diagonal communication.

Channels of communication

A breakdown in the communication channel leads to an inefficient flow of information. Employees are unaware of what the company expects of them. They are uninformed of what is going on in the company.

This will cause them to become suspicious of motives and any changes in the company. Also without effective communication, employees become department minded rather than company minded, and this affects their decision making and productivity in the workplace. Eventually, this harms the overall organizational objectives as well. Hence, in order for an organization to be run effectively, a good manager should be able to communicate to his/her employees what is expected of them, make sure they are fully aware of company policies and any upcoming changes. Therefore, an effective communication channel should be implemented by managers to optimize worker productivity to ensure the smooth running of the organization.

1 Formal Channels of Communication

The messages which are circulating on regulated, preset channels, of an organization are creating the formal communication. The content of the communication is related to the organization's activity, to the work and to anything which is related to those. The formal communication can consist in verbal messages, nonverbal messages, written, under the shape of letters, telephone messages, radio messages, printed, internal notes. Even some gestures can consist in formal communication. The messages are transmitted by the authorized ones: on official channels, these arrive to the ones who need to react, to people or machines which need to know the content of these messages. Usually, all formal communications are recorded and kept in the organization's evidence. Are retained copies of these by the transmitter, by the receiver, by all of the desks from the organization which need to know and keep the information. Examples of formal communications are given by work commands, reports and financial evidence, reports over sells / inventory, statements referring to the company's policies, post descriptions, etc. The formal communication network is formed out of formal channels, created by setting a formal system of responsibilities according to the hierarchical structure of the organization. The perfect network is the one which contains communication channel from bottom up, downwards and horizontally. Often the direction of horizontal communication is missing or it is inefficient and in this way the accuracy of the information decreases. The situation is appearing because of the lack of permanent circulation of the information between departments, although this is vital for the organization in conditions of existent competition, or the lack of specialists in organizational communication. The number of communication channels available to a manager has increased over the last 20 odd years. Video conferencing, mobile technology, electronic bulletin boards and fax machines are some of the new possibilities. As organizations grow in size, managers cannot rely on face-to-face communication alone to get their message across. A challenge the manager's face today is to determine what type of

communication channel should they opt for in order to carryout effective communication. In order to make a manager's task easier, the types of communication channels are grouped into three main groups: formal, informal and unofficial.

- A formal communication channel transmits information such as the goals, policies and procedures of an organization. Messages in this type of communication channel follow a chain of command.
- This means information flows from a manager to his subordinates and they in turn pass on the information to the next level of staff.
- An example of a formal communication channel is a company's newsletter, which gives employees as well as the clients a clear idea of a company's goals and vision. It also includes the transfer of information with regard to memoranda, reports, directions, and scheduled meetings in the chain of command.
- A business plan, customer satisfaction survey, annual reports, employer's manual, review meetings are all formal communication channels.

2 Informal Channels of Communication

Informal communication arises out of all those channels that fall outside the formal channels and it is also known as grapevine. It is established around the societal affiliation of members of the organization. Informal communication does not follow authority lines as in the case of formal communication. Informal communication takes place due to the individual needs of the members of an organization and subsists in every organization. Normally, such communication is oral and may be expressed even by simple glance, sign or silence. Informal communication, is implicit, spontaneous multidimensional and diverse. It often works in group of people, i.e. when one person has some information of interest; he passes it on to his informal group and so on. An organization can make efficient use of informal channels to fortify the formal channels of communication. It acts as a valuable purpose in expressing certain information that cannot be channeled via the official channels. It satisfies the people desires to identify what is happening in the organization and offers an opportunity to express dreads, worries and complaints. Informal communication also facilitates to ameliorate managerial decisions as more people are involved in the process of decision-making. Inspite on many advantages, informal communication has certain disadvantages. Informal communication contains facts, deceptions, rumors and unclear data. The informal channels of communication may transmit completely imprecise information that may harm rather than

help an organization. In addition, it is impossible to fix the responsibility for its origin or flow of information. However, for the efficient working of any organization both formal and informal communications are required.

An example of an informal communication channel is lunchtime at the organization's cafeteria/canteen. Here, in a relaxed atmosphere, discussions among employees are encouraged. Also managers walking around, adopting a hands-on approach to handling employee queries is an example of an informal communication channel. Quality circles, team work, different training programs are outside of the chain of command and so, fall under the category of informal communication channels.

3 Grapevine Communication (Informal Communication)

Grapevine is an informal channel of business communication. It is called so because it stretches throughout the organization in all directions irrespective of the authority levels. Man as we know is a social animal. Despite existence of formal channels in an organization, the informal channels tend to develop when he interacts with other people in organization. It exists more at lower levels of organization. Grapevine generally develops due to various reasons. One of them is that when an organization is facing recession, the employees sense uncertainty. Also, at times employees do not have self-confidence due to which they form unions. Sometimes the managers show preferential treatment and favour some employees giving a segregated feeling to other employees. Thus, when employees sense a need to exchange their views, they go for grapevine network as they cannot use the formal channel of communication in that case. Generally during breaks in cafeteria, the subordinates talk about their superior's attitude and behaviour and exchange views with their peers. They discuss rumours about promotion and transfer of other employees. Thus, grapevine spreads like fire and it is not easy to trace the cause of such communication at times.

Example of Grapevine Network of Communication

1. Suppose the profit amount of a company is known. Rumour is spread that this much profit is there and on that basis bonus is declared.
2. CEO may be in relation to the Production Manager. They may have friendly relations with each other.

Advantages of Grapevine Communication

1. Grapevine channels carry information rapidly. As soon as an employee gets to know some confidential information, he becomes inquisitive and passes the details then to his closest friend who in turn passes it to other. Thus, it spreads hastily.
2. The managers get to know the reactions of their subordinates on their policies. Thus, the feedback obtained is quick compared to formal channel of communication.
3. The grapevine creates a sense of unity among the employees who share and discuss their views with each other. Thus, grapevine helps in developing group cohesiveness.
4. The grapevine serves as an emotional supportive value.
5. The grapevine is a supplement in those cases where formal communication does not work.

Disadvantages of Grapevine Communication

1. The grapevine carries partial information at times as it is more based on rumours. Thus, it does not clearly depict the complete state of affairs.
2. The grapevine is not trustworthy always as it does not follow official path of communication and is spread more by gossips and unconfirmed report.

3. The productivity of employees may be hampered as they spend more time talking rather than working.
4. The grapevine leads to making hostility against the executives.
5. The grapevine may hamper the goodwill of the organization as it may carry false negative information about the high level people of the organization.

A smart manager should take care of all the disadvantages of the grapevine and try to minimize them. At the same time, he should make best possible use of advantages of grapevine.

ASPECTS OF TECHNICAL COMPETENCE:

Technical communication is a central factor in the emerging knowledge society, where technocrats and professionals in different areas face new communication challenges. In order to be an effective technical communicator, one needs to understand the process of technical communication. We may define technical communication as a transmission of scientific and technical information from one individual or group to another. This exchange of professional information may include simple definitions of tools, complex descriptions of machines and processes, or sophisticated explanation and interpretation of scientific principles. Effective technical communication is a dynamic interchange that may involve a systematic understanding of scientific and technical subjects.

The three important requirements of effective technical communication are

Subject competence

Linguistic competence

Organisational competence

Subject Competence Ideation in the technical communication process, which depends on the sender's subject competence, i.e., his or her professional knowledge, experiences, and abilities. Subject competence is the first requirement of technical communication. 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 might lead to incomplete and ineffective communication.

Linguistic Competence Linguistic competence, on the other hand, is the possession of appropriate language skills and the ability to present scientific facts or information clearly and objectively. As technical communication involves technical presentation of data in reports, proposals, research papers, technical bulletins, manuals, and handbooks, linguistic competence includes several functional skills. Lack of these skills may lead to ineffective or incomplete communication. These skills include the ability to: Analyse facts or information for clear

presentation Use appropriate rhetorical devices to present scientific data Use graphs, charts, and diagrams systematically Organizational Competence Since technical communication is a systematic and structured presentation of information, it involves a process of logical and thematic organisation.

Organisational competence is the ability to organise technical information in a logical and structured way. It includes several skills such as the ability to sequence thoughts in a sentence, Technical communication is a transmission of technical and professional information from one individual or group to another. Subject competence is the first requirement of technical communication. Linguistic competence is the ability to present scientific facts or information clearly and objectively. Organisational competence is the ability to organise technical information in a logical and structured way. Nature and Dimensions of Technical Communication organise a paragraph according to the needs of the reader and the topic, use appropriate logical ordering, and provide thematic coherence to expression.

What are the Aspects of technical communication?

The three important requirements of effective technical communication are:

1. Subject competence:

It is about having appropriate knowledge of a particular technical subject as well as having sophisticated technical or presentation skills. Inadequate background knowledge in the subject or lack of information may lead to incomplete or ineffective communication.

2. Linguistic competence:

It is about appropriate language skills and ability to present the information clearly and objectively (without any confusion).

Example: It can be presentation of data in reports, proposals, research papers, technical bulletin (case, press release ,announcement) manuals, handbooks

3. Organizational competence:

It is the ability to organize technical information in a systematic and logical way. It is about arranging thoughts into sentences and sentences into appropriate paragraphs .this makes content easy to understand without any confusion and come up to a desired conclusion.

FORMS OF TECHNICAL COMMUNICATION

The fast growth of technical knowledge coupled with the development of sophisticated information technology has changed the way we communicate in professional situations. We

prefer fast, interactive, and result-oriented forms of communication such as voice-mail, email, video transmission, teleconferencing, videoconferencing, intranet transmission, and so on to the traditional and slow forms of communication such as letters, memos, newsletters, and so forth. Today, one may find a range of interactive technologies for communication.

However, technical communication still depends on the two basic forms of communication: oral and written.

Oral and Written Communication Each form of communication has its merits and demerits. While oral communication provides immediate feedback and promotes better understanding, written communication provides a permanent record and facilitates the creation of organised messages. Oral communication gives a personal touch to the communication process whereas written communication is impersonal as the two communicators cannot see each other. The choice of an appropriate form of communication may depend on the need and purpose of the communicative situation.

External and Internal Communication There are two widely recognised categories of technical communication: external communication and internal communication. External communication consists primarily of describing the areas of expertise technical people or professionals provide. This may include any communication that an organisation does with people belonging to other organisations. Internal communication includes memos describing problems or requesting additional resources, different kinds of reports and proposals, internal presentations, company meetings, policy statements, office instructions, and office descriptions to be used for public releases or company websites.

General and Technical Communication Technical communication is the process of communicating a specific message to a specific audience with a specific purpose. The repetition of the word 'specific' indicates the special nature of technical communication. It is this need-based specific characteristic of technical communication that makes it different from general or literary communication. There are several characteristic features of technical communication that makes it different from general communication. As shown in Table, technical communication differs from general communication in content, style and approach of presentation, attitude, organisation, and language. Oral communication provides immediate feedback, written communication provides a permanent record.

Effective Technical Communication

Complex and important exposition techniques are not always for a specific audience specific audience may or may not involve graphics Usually, involves graphics Progress

Technical communication is a means to document or convey scientific, engineering, or other technical information. Individuals in a variety of contexts and with varied professional credentials engage in technical communication. Some individuals are designated as technical communicators. These individuals use a set of methods to research and document technical processes or products. Technical communicators may put the information they capture into paper documents, web pages, digitally stored text, audio, video, and other media. The Society for Technical Communication defines the field as any form of communication that focuses on technical or specialized topics, communicates specifically by using technology or provides instructions on how to do something. More succinctly, the Institute of Scientific and Technical Communicators defines technical communication as factual communication, usually about products and services. Whatever the definition of technical communication, the overarching goal of the practice is to create easily accessible information for a specific audience.

Technical communication is a professional task performed by specialized employees or consultants. For example, a professional writer may work with a company to produce a user manual. Some companies give considerable technical communication responsibility to other technical professionals—such as programmers, engineers, and scientists. Often, a professional technical writer edits such work to bring it up to modern technical communication standards.

To begin the documentation process, technical communicators identify the audience and their information needs. The technical communicator researches and structures the content into a framework that can guide detailed development. As the body of information comes together, the technical communicator ensures that the intended audience can understand the content and retrieve the information they need. This process, known as the 'Writing Process', has been a central focus of writing theory since the 1970s, and some contemporary textbook authors apply it to technical communication. Technical communication is important to most professions, as a way to contain and organize information and maintain accuracy.

The technical writing process can be divided into five steps: 1. Determine purpose and audience 2. Collect information 3. Organize and outline information 4. Write the first draft 5. Revise and edit

Determining purpose and audience

All technical communication serves a particular purpose—typically to communicate ideas and concepts to an audience, or direct an audience in a particular task. Technical communication professionals use various techniques to understand the audience and, when possible, test content on the target audience. For example, if bank workers don't properly post deposits, a technical communicator would:

Review existing documentation (or lack thereof)· Interview bank workers to identify conceptual errors· Interview subject matter experts to learn the correct procedures· Author new material that describes the correct procedures· Test the new material on the bank workers·

Similarly, a sales manager who wonders which of two sites is better for a new store might ask a marketing professional to study the sites and write a report with recommendations. The marketing professional hands the report off to a technical communicator (in this case, a technical editor or technical writer), who edits, formats, and sometimes elaborates the document in order to make the marketing professional's expert assessment usable to the sales manager. The process is not one of knowledge transfer, but the accommodation of knowledge across fields of expertise and contexts of use. This is the basic definition of technical communication

Audience type affects many aspects of communication, from word selection and graphics use to style and organization. Most often, to address a particular audience, a technical communicator must consider what qualities make a text useful (capable of supporting a meaningful task) and usable (capable of being used in service of that task). A non-technical audience might misunderstand or not even read a document that is heavy with jargon— while a technical audience might crave detail critical to their work. Busy audiences often don't have time to read entire documents, so content must be organized for ease of searching—for example by frequent headings, white space, and other cues that guide attention. Other requirements vary according to particular audience's needs.

Technical communication in the government is particular and detailed. Depending on the segment of government (and country), the government component must follow distinct specifications. The US Army, for example, uses the MIL-spec (Military specification). Information changes continuously and technical communications (technical manuals, interactive electronic technical manuals, technical bulletins, etc.) must be updated.

The United States Department of Defense, for example uses many technical manuals, and their creation and maintenance is a core agency responsibility. Though detail-oriented in their requirements, the DoD has deficiencies in technical communication.

Collecting information

Technical communicators must collect all information that each document requires. They may collect information through primary (first-hand) research—or secondary research, using information from existing work by other authors. Technical communicators must acknowledge all sources they use to produce their work. To this end, technical communicators typically distinguish quotations, paraphrases, and summaries when taking notes.

Organizing and outlining information

Before writing the initial draft, the technical communicator organizes ideas in a way that makes the document flow well. Once each idea is organized, the writer organizes the document as a whole—accomplishing this task in various ways:

Chronological: used for documents that involve a linear process, such as a step-by-step guide that describes how to accomplish something parts of an object: Used for documents that describe the parts of an object, such as a graphic showing the parts of a computer (keyboard, monitor, mouse, etc.) Simple to complex (or vice versa): starts with easy ideas and gradually goes into complex ideas Specific to general: starts with many ideas, then organizes the ideas into sub-categories General to specific: starts with a few categories of ideas, then goes deeper

After organizing the whole document, the writer typically creates a final outline that shows the document structure. Outlines make the writing process easier and save the author time.

FEATURES OF TECHNICAL COMMUNICATION

Technical communication is not learnt in a day. Sincere effort and practice go into learning to write a report or memo. It is important to look into the features that constitute good technical communication.

AUDIENCE

The audience is specific in technical communication. The executives who have to attend a meeting with their boss have to clear information about time, venue, and agenda. This is normally done by the use of memo, or agenda or circular. A technical document is created for a specific type of client or group of clients. During creation of message if this is not kept in focus, then a technical writer will not generate documents whose goal would be to address the needs of specific readers. To write a technical document, the writer must analyze the audience and decide the level of knowledge it possesses.

The audience could be the following:

- Technical: Those with technical qualification, experience, or training. For example, engineers, scientists, and doctors.
- Semi- technical: Those who have received some kind of technical training or work experience in industry, but not directly in the field such as those with training in related areas. For example, staff (administration, clerical, secretarial)
- Non- technical: General public or unknown audience, or any combination of technical. Semi- and non-technical readers, including customers, clients, and patients.

OBJECTIVE LANGUAGE

Technical communication is expressed in a plain, objective language, it uses terminology that the audience understands. Because its purpose is to inform, instruct or persuade a reader about a specific practical matter, technical writing draws the writer's attention towards what is

relevant. A good technical document does not prompt emotional, unusual, or unreasonable interpretations of the subject.

FORMAT

A technical document has a presentation style that enables readers to assimilate information at a glance. Good writers make the format of the technical document easy to scan.

Technical communication according to requirement can have one of the following formats:

- Reports or documents, e.g. lab report
- Record-keeping forms, e.g. service report
- Instructions, e.g. technical manual
- Correspondence, e.g. letters, memos, emails
- Presentation, e.g. marketing calls, interviews

STYLE

Writers style (language, organization, and layout) the document depending on the audience, purpose, and format. A technical document can contain many technical terms which many be jargon for others. In that case, the writer includes definition and explanation for the difficult terms.

The people who read technical documents also prefer that the writer gets straight to the point and uses the words that are functional, exact, and clear. They prefer paragraphs that are short, with each paragraph focusing only on one idea. They also prefer clearly demarcated headings subheading with numbered graphics, tables and examples that illustrate the details of the subject.

Technical style is non-literary and scientific. It is recognized by simple, clear, straightforward, and fact-based expression. Flowery and roundabout approach is not acceptable in scientific and technical approach to writing. Literary style reflects the individuality of the writer. In scientific writing, this is not possible as there is a standard format that has to be followed.

There are many principles to scientific approach of style. Such an approach implies that:

- It should be clear and simple.
- It has a purpose to inform, instructor persuade.
- Organization has to be proper.
- Correct sentence construction. It should be right and proper.
- Words chosen should be technical and direct. One does not necessarily aim at elegant, creative writing.
- Sentence construction in technical writing should be kept simple. There can be many ideas and facts. Shorter sentences are easy to understand. However, a message comprising only of short terms will sound choppy and artificial. Hence, vary sentence length from 3-25 words.
- Understanding negative sentences is difficult, especially when a sentence contains two or more words that are negative.
- Some words and phrases are considered loaded, that is, they have strong emotional meaning. If such loaded words or phrases are insulting, it is not appropriate in any type of professional writing.
- The tone in most technical and business writing should be kept neutral. Shifting the tone can confuse the readers.
- The writer should avoid circumlocution in his composition.

Accuracy

Accuracy is a very important feature of communication. It includes both accurate information and accurate expression. The information should be correct and well-expressed. Overwriting, wrong spellings, grammatically incorrect structures— these are some reasons for misunderstanding. Accuracy of expression requires that there should not be any errors of spellings, punctuation, grammar or usage. Everyone has to be careful about grammar and

punctuation. Accuracy always demands precision in writing. Precision is the quality of being exact and accurate. It is an essential feature of writing. An effective sentence requires correctness and appropriateness in writing.

Brevity

Brevity is the quality of being brief. It is a striking feature of written communication. Brevity means giving maximum information in the minimum number of words possible. It can be achieved by avoiding wordiness and repetition. There is an economy of words. It saves the time of the writer and the reader also. Communication should be accurate, precise, concise, and pointed. It should not be irrelevant, repetitive, and circumlocutive.

Ways to achieve brevity in writing:

1. Replace several vague words with more powerful and specific words.
2. Interrogate every word in a sentence.
3. Combine Sentences.
4. Omit repetitive wording.
5. Eliminate words that explain the obvious or provide excessive detail.
6. Start sentences with the subject.
7. Remove Redundancy.
8. Change phrases into single-words and adjectives.
9. Avoid overusing expletives at the beginning of sentences.
10. Avoid circumlocutions in favor of direct expressions

Clarity

The message should be clear, well-planned and expressed in a logical way. It should not be ambiguous. Clearly written messages avoid misunderstanding and save time. Vague or ambiguous expressions must be avoided. Clarity paves way for readability. For readability clear, simple, familiar, precise, specific words, phrases and expressions should be used. Long

sentences, unclear words and clumsy expressions should be avoided. Clarity depends upon five factors. They are as follows:

1. Always use simple, common and meaningful words. Avoid technical words, jargons and cliches.
2. Use short and simple sentences as long sentences can confuse the reader.
3. Use proper punctuation in writing; it facilitates comprehension.
4. Always give definite and concrete details with facts and figures.
5. Use coherence, that is, the logical sequence in the presentation of ideas.

Clarity means being clear in meaning. It is indispensable for understanding. Clarity includes both clarity of expression as well as clarity of thought. It always uses direct language and specific words and expressions. It implies avoiding indirect or euphemistic expressions, exaggeration, artificial eloquence, unnecessary repetition, etc. Information becomes particular when one uses specific and concrete words and expressions in writing. The use of specific and concrete words brings in particularity, vividness and clarity in presentation. On the other hand, abstract and vague words confuse the reader.

Ways to make writing more clear:

- **Use active voice:** Sentences in active voice are usually easier to understand than those in passive voice because **active-voice constructions** indicate clearly the performer of the action expressed in the verb. In addition, changing from passive voice to active often results in a more concise sentence. So use active voice unless you have good reason to use the passive. For example, the passive is useful when you don't want to call attention to the doer; when the doer is obvious, unimportant, or unknown; or when passive voice is the conventional style among your readers.
- The committee decided to postpone the vote.
- A decision was reached to postpone the vote.

- **Use parallel constructions:** When you have a series of words, phrases, or clauses, put them in parallel form (similar grammatical construction) so that the reader can identify the linking relationship more easily and clearly.
 - In Florida, where the threat of hurricanes is an annual event, we learned that it is important (1) to become aware of the warning signs. (2) There are precautions to take, and (3) deciding when to take shelter is important. (*not parallel*)
 - In Florida, where the threat of hurricanes is an annual event, we learned that it is important (1) to become aware of the warning signs, (2) to know what precautions to take, and (3) to decide when to seek shelter. (*parallel*)
- **Avoid overusing noun forms of verbs:** Use verbs when possible rather than noun forms known as "**nominalizations**."
 - The implementation of the plan was successful.
 - The plan was implemented successfully.
- **Be careful about placement of subordinate clauses:** Avoid interrupting the main clause with a subordinate clause if the interruption will cause confusion:
 - Industrial spying , because of the growing use of computers to store and process corporate information, is increasing rapidly.
 - Industrial spying is increasing rapidly because of the growing use of computers to store and process corporate information.
 - Because of the growing use of computers to store and process corporate information, industrial spying is increasing rapidly.
- **Link pronouns to nouns clearly:** Because pronouns stand in for nouns, be sure your pronouns refer to nouns you have already put in place. Vague pronoun reference often occurs

when pronouns are used at the start of a sentence. Example: Alia met Sarah . She wore a green silk dress. Which woman wore the dress?

- **Avoid Double-Negatives:** Multiple negatives can be difficult for the reader to follow. It's always better to use an affirmative form than to negate a negative. In the examples below, double-negatives are in *italics*:

- In order to complete her homework, Kate *couldn't do without* the study guide.
- Kate required the study guide to complete her homework.

Writing the first draft

After the outline is complete, the writer begins the first draft, following the outline's structure. Setting aside blocks of an hour or more, in a place free of distractions, helps the writer maintain a flow. Most writers prefer to wait until the draft is complete before any revising so they don't break their flow. Typically, the writer should start with the easiest section, and write the summary only after the body is drafted. The ABC (abstract, body, and conclusion) format can be used when writing a first draft of some document types. The abstract describes the subject, so that the reader knows what the document covers. The body is the majority of the document and covers topics in depth. Lastly, the conclusion section restates the document's main topics. The ABC format can also apply to individual paragraphs—beginning with a topic sentence that states the paragraph's topic, followed by the topic, and finally, a concluding sentence.

Revising and editing once the initial draft is laid out, editing and revising can be done to fine-tune the draft into a final copy. Four tasks transform the early draft into its final form, suggested by Pfeiffer and Boogard:[citation needed]

Adjusting and reorganizing content on topics that need more attention, shorten other sections—and relocate certain paragraphs, sentences, or entire topics.

Editing for style Good style makes writing more interesting, appealing, and readable. In general, the personal writing style of the writer is not evident in technical writing. Modern technical writing style relies on attributes that contribute to clarity: Headings, lists, graphics· Generous

white space· Short sentences· Present tense· Active voice[7] (though some scientific applications still use the passive voice)· Second and third person as required·

Technical writing as a discipline usually requires that a technical writer use a style guide. These guides may relate to a specific project, product, company, or brand. They ensure that technical writing reflects formatting, punctuation, and general stylistic standards that the audience expects. In the United States, many consider the Chicago Manual of Style the bible for general technical communication. Other style guides have their adherents, particularly for specific industries—such as the Microsoft Style Guide in some information technology settings.

Technical communication is written and oral communication for and about business and industry. Technical communication focuses on products and services—how to manufacture them, market them, manage them, deliver them, and use them. Technical communication is composed primarily in the work environment for supervisors, colleagues, subordinates, vendors, and customers. As either a professional technical communicator, an employee at a company, or a consumer, you can expect to write the following types of correspondence for the following reasons (and many more).

- As a computer information systems (CIS) employee, you work at a 1-800 hotline helpdesk. A call comes from a concerned customer. Your job is to answer that client's questions and follow up with a one-page e-mail documenting the problem and your responses.
- You are a technical communicator, working in engineering, biomedical equipment manufacturing, the automotive industry, computer software development, or a variety of other job areas. Your job is to write user manuals to explain the steps for building a piece of equipment, performing preventative maintenance, or for shipping and handling procedures.
- As a trust officer in a bank, one of your jobs is to make proposals to potential clients. To do so, you must write a 20- to 30-page proposal about your bank's services. •

You are a customer. You ordered an automotive part from a national manufacturer. Unfortunately, the part was shipped to you five days later than promised, it arrived broken, and you were charged more than the agreed-upon price. You need to write a letter of complaint.

- As the manager of a medical records reporting department, one of your major responsibilities is ensuring that your staff's training is up to date. After all, insurance rules and regulations keep changing. To document your department's compliance, you must write a monthly progress report to upper-level management.
- You are a webmaster. Your job is creating a corporate Web site, complete with online help screens. The Web site gives clients information about your locations, pricing, products and services, mission statement, and job openings. The dropdown help screens provide easy-to-access answers for both customer and employee questions.
- As an entrepreneur, you are opening your own computer-maintenance service (or services for HVAC repair, deck rebuilding, home construction, lawn care, or automotive maintenance). To market your company, you will need to write fliers, brochures, or sales letters.
- You have just graduated from college (or, you have just been laid off). It's time to get a job. You need to write a resume and a letter of application to show the importance of technical communication.

The National Commission on Writing concluded that "in today's workplace writing is a 'threshold skill' for hiring and promotion among salaried . . . employees. Survey results indicate that writing is a ticket to professional opportunity, while poorly written job applications are a figurative kiss of death" ("Writing: A Ticket to Work" 2007, 3). Technical communication is a significant factor in your work experience for several reasons. Business Technical communication is not a frill or 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 main features of Technical Communication are **Accuracy, Brevity and Clarity**.

Use of visual aids also plays a major role in the process of technical communication.

Types of technical communication, both oral and written are also important in the context of formal communication.

Differences between Technical and General Writing.

Technical Writing:

1. It has a format.
2. It is very precise and to the point.
3. It is formal.
4. It has proofs like data, statistics, figures, etc in the written format.

General Writing:

1. It may or may not have any specific data or statistics.
2. It can be formal or informal.
3. It does not have any specific form.
4. Figures may or may not be used.