

BT 0071
Technical Communication

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BLOCK INTRODUCTION

'Technical Communication' is a two credit subject in the first semester of B.Sc. IT program.

This book on the above subject makes an attempt to familiarize you with the Technical Communication process. Technical Communication (also referred to as technical writing) is the art and science of making technical information easier to understand and use. The book covers process of creating, designing and transmitting technical information so that people can understand it easily and use it safely, effectively, and efficiently. Technical communication prepared through this process is read by people who need to carry out procedures and solve problems.

Worldwide, there is a strong demand for technical writers. Over the last couple of decades, the technical communication profession has grown rapidly in India, especially in the IT industry, and is now fast becoming a sought-after career option.

The subject is divided into 8 units. A brief description of all of them is given below:

Unit 1: Technical Communication Overview

In this Unit, you will study the evolution of Technical Communication and its Characteristics. Besides these, it also covers the role of Technical Communication in business and industry, and careers in Technical Communication.

Unit 2: Audience Analysis

In this unit, you will study basic classification of readers, types of audiences, and also covers research on readers, audience analysis, audience adaptations and audience profile sheet.

Unit 3: Research Interviews

In this Unit, you will study research tools, How to Conduct SME Interviews, and also covers the Validation of collected information.

Unit 4: Technical Writing Structure

In this Unit, you will study the Importance of Information Structures, role of Description, Hierarchical Structure, Structural Clash and Information Chunk.

Unit 5: Technical Writing Style

In this unit, you will study the basic rules in writing effective English, naming conventions, screen terminology, and style manuals

Unit 6: Technical Communication Editing

In this unit, you will study the need in avoiding perspectives, revising document, structuring and choosing right words and phrases. It also covers check list for editing and proof reading.

Unit 7: Systems Development Life Cycle

In this unit, you will study the System Development Life Cycle (SDLC) phases, and also the Strength and Weakness of SDLC.

Unit 8: Technical Communication Ethics

In this unit, you will study what is Legal & Ethical, general category of ethical issues in Technical Communication. It also covers the STC Code for Communicators.

Objectives of studying the subject

After going through this subject, you will be in a position to:

- show the skills and knowledge necessary to succeed in the technical communication profession.
- describe industry standards, processes, and documentation tools.
- display good verbal and written communication skills and a flair for technology.

- state the various means of professional growth and advancement in technical writing jobs.

The subject demands the knowledge and understanding of the subject “Fundamentals of IT” of first semester of B.Sc. IT program. It also demands understanding of basics of English grammar and flair for writing.

Theoretical aspects of this subject should be practiced in ‘Technical Communication Practical’ which is a 2 credit subject in the fourth semester of B.Sc. IT.

Unit 1 Technical Communication Overview

Structure

- 1.1 Introduction
 - Objectives
- 1.2 Meaning of Technical Writer?
- 1.3 Role of Technical Writer
- 1.4 Evolution of Technical Communication
- 1.5 Characteristics of Technical Communication
- 1.6 Essential Skills of Technical Communication
- 1.7 Indicators of Excellence in Technical Communication
- 1.8 Role of Technical Communication in Business and Industry
- 1.9 Careers in Technical Communication.
- 1.10 Summary
- 1.11 Terminal Questions
- 1.12 Answers

1.1 Introduction

Technical Communication (also referred to as technical writing) is the art and science of making technical information easier to understand and use. It's a process of creating, designing and transmitting technical information so that people can understand it easily and use it safely, effectively, and efficiently. Technical communication prepared through this process is read by people who need to carry out procedures and solve problems. Technical communication training is well suited for practical minded communicators like Teachers, Journalists, IT Professionals and Project Managers.

Worldwide, there is a strong demand for technical writers. Overwhelmingly, they use the English language. Software companies require technical and user documentation of their products, and will continue to do so for the

foreseeable future. Over the last couple of decades, the technical communication profession has grown rapidly in India, especially in the IT industry, and is now fast becoming a sought-after career option.

Objectives

After going through the unit, you will be able to:

- explain the basic concepts in technical communication
- identify the skills involved in technical communication
- list the job opportunities in technical communication

1.2 Meaning of Technical Writer

Technical writers are the people who write.

- technical and software manuals
- handbooks
- proposals
- technical guides
- application notes
- tutorials
- performance reports
- data sheets
- online help
- technical and product briefs etc.

To be precise, anyone who writes about technology for other people is typically referred to as a technical writer. Furthermore, these technical writers require some technical writing skills. In the information technology realm, project managers and analysts write a large number of technical documents that must be clear and concise. A technical writer is still looked upon as someone who explains the product to the end user.

It is not necessary that technical writers should be programmers or have more than a general understanding of the technology. But technical writers must have the ability to learn about a new product and then explain it to others. So people with training in journalism, teaching, and writing along with technical savvy can grow to be the best technical writers. Today, both technical adaptability and writing/communication skills are essential for technical writers to succeed. Technical writers enjoy learning and reading. They find writing comfortable, though they aren't perfect; typically revising their work many times. They are both creative and orderly. Moreover, they put themselves in the end user's position.

1.3 Role of Technical Writers

When technical writers approach a new piece of technology, they equip themselves with an eagerness and unconditional mind to learn new things through observation. As they interact with and learn the software, they identify the information needs of the software users. They must be able to communicate well with programmers and customers, and extract information from them in a professional and personable manner.

A technical writer's primary tool is the English language. Secondly, they use proprietary software like Microsoft Word, FrameMaker, and RoboHelp; or – increasingly – free and open source documentation software such as DocBook and Wiki. In the course of their careers, technical writers learn dozens of other software packages and tools, and then teach them to others.

Self Assessment Question

1. _____ is the primary tool of the technical writer
 - a) English
 - b) Microsoft Word
 - c) RoboHelp
 - d) FrameMaker

1.4 Evolution of Technical Communication

Documents in the form of invoices, receipts and deeds are the earliest samples of technical communication. The English poet Geoffrey Chaucer wrote some technical communication about the astrolabe, a navigational instrument. The Origin of Species, Charles Darwin's famous work on evolution, is another example of technical communication. But technical communication couldn't attained a professional status until around the time of World War II, when the military needed people to write user's manual and maintenance manuals for hardware and weapons system. In the past twenty years, the number of technical communicators has grown in an exponential manner, largely because of the growth of the computer industry and related high-technology fields.

Before the 1970s, technical communication was not a primary concern. A computer manufacturer would market large systems without any instructions manuals at all. The company would send out technicians to install the system, and the "how to use" aspect was explained orally. Naturally, this wasn't a very effective or efficient way to educate the purchaser.

As more companies entered the richly profitable field, manufacturers realized that customers were frustrated when the product came without a user's guide, or when guide arrived very late after the system, or when they were useless because of its poor quality. To delight customers, high tech companies started to pay more attention to prepare documents with graphical illustrations.

In the current industrial scenario, technical communicators work closely with design engineers and the legal and marketing staff in creating a new product, and every detail of the product will be clearly conveyed to the end user, i.e., the consumer. The emphasis today is on "user friendly" products, and no product is friendly if the user can't figure out how to use it. Because

technical communicators are valued members of professional organizations, their salaries and prestige have grown substantially. In many companies, technical communicators receive the same salary as hardware and software engineers.

1.5 Characteristics of Technical Communication

Technical Communication – Targets a Specific Reader

The most significant characteristics of technical communication is that you have to customize the information for a particular reader. This method is to bring in personal warmth to your document. Sometimes you will be aware of your potential reader, then your job is easy. For instance, writing a proposal to your manager. There you will think about that person's background, responsibilities, history with organization, attitudes and alike. While preparing the proposal you will be considering these factors to entice the manager and to make it very effective.

Imagine a situation, where you are writing to several people with diverse needs. There you have to create a hypothetical profile by picking commonalities of the potential readers. (It will be dealt with details in Unit 2, Audience Analysis)

Even though technical communication is addressed to particular readers, sometimes it is read by people who were never intended to be the audience. Keeping this in mind, you must be careful that all your writing reflects the highest standards of professionalism.

Technical Communication – Helps readers solve problems

Lindsey Robbins describes technical communication as a conversation between the user and the technical writer – in the sense that the technical writer must anticipate the questions a user would ask about the software. Robbins states that "Sometimes, your users or constituents won't know the

correct question to ask. In those situations, try to think out the questions for them and answer them in advance. Provide them with the conversation starter and they're more likely to be engaged. People read technical communication to help them solve problems; people also write and distribute technical communication to help solve problems. For instance, before joining this course, you read the SMU DDE prospectus and related web details to solve the problem, i.e., selecting a course of your choice.

Technical Communication – Part of organizational context

Technical Communication is created by people working within or for an organization to further its goals. Consider, for example, Education Department that oversees the programs in vocational education. Every activity undertaken by the department involves technical communication. The Educational Department submits an annual report to the government. This envisages each vocational program offered by the department, indicating what need it was intended to address, who delivered it, who enrolled in it, where and when it was offered, how much it cost, and how much money was generated. The report also covers the success and failures of each program and offers recommendations on how to make it more effective next time.

The concerned department also produces a vast quantity of technical information for the public as well in the form of flyers, brochures, pamphlets and even radio, print and television advertisements to publicize its offerings. Furthermore, the course material in the form of texts, work books, audio and video support materials forms a part of technical communication.

Technical Communication – Created collaboratively

Technical communicators are not a separate entity; they work with other creative people like production specialists, lawyers, subject matter experts and technical professionals to create a better document to convey the

synergy and creativity of the thus made collaboration. Collaboration is common in technical communication because no one person has all the information, skill and time to put together a big document. Because of the collaborative nature of technical communication, inter-personal skills are very essential. Technical writer should be able to listen to people with other views, express views clearly and diplomatically, and compromise.

Technical Communication – Synergy of words and graphics

Technical Communication is an effective combination of words and graphical images. Graphical images can clearly convey complex concepts which cannot be easily conveyed through words. Moreover, they can describe, communicate instructions, and also communicate large amount of quantifiable data. It can also communicate with non-native speakers of English and make the document more interesting and appealing to readers. Therefore, for narrative purpose a writer can depend on words and for simplification of concepts, can depend on graphics. In short, Technical Communication is a synergy of both words and graphics.

Technical Communication – Involves visualization

Design features make the technical document more effective and user friendly to the reader, as 80% of the communication is through non-verbal cues. Technical communicators visualize documents for the following purposes.

1. *To make the document attractive*, as a good design can entice the reader into the textual content
2. *To help the reader navigate the document*. Normally, technical documents are lengthy and run to many pages, and most readers want to read only parts of it. Design features help them to see where they are and what they want from the text
3. *To help the reader understand the document*. Design features help in the organization of the content, and a reader can easily recognize the

patterns, colors, size of the design elements, and be able to better understand the document.

Technical Communication – Involves high-tech tools

Technical Communication is produced on high-tech tools. The personal computer along with the printer is used in every phase of the document production. Technical writer uses word – processing software; graphics software and desktop publishing software for the completion of technical communication. As Information technology develops, becoming more powerful, easier to use, and less expensive, technical communicators and technical professionals alike are continuously upgrading their skills.

1.6 Essential Skills of Technical Communication

There are five skills or characteristics, which are "musts" for the technical writer:

1. Facility with technology

Technical writer must have the potential to grasp technology. They should have a bent towards one of the sciences, and can understand the inner workings of cells or atoms. They have to be web savvy and know how to interpret code. Besides these, they should be curious about how things work. Moreover, one can learn technologies they don't understand, if they have the motivation. This understanding brings a sense of achievement and knowledge that is rewarding at the end of the day.

2. Ability to write clearly

The essential skill of any technical communicator is to disambiguate. Their core job will consist of studying complicated things and explaining them in easy-to-understand ways. They can't just pass off explanations that no one can fully understand. Writing about something, as opposed to talking about it, requires more understanding. Avoid passive sentences and long constructions. Define acronyms and avoid assumptions about what the user knows.

3. Talent in showing ideas graphically

Any time one can show an idea graphically, they can score a hundred points with the reader. People understand better when they can communicate their ideas visually. These images go a long way toward making their writing clear.

4. Patience in problem-solving/troubleshooting

Unless you have patience, you'll never make it. Much of IT work consists of problem solving. It's amazing how a seemingly impossible problem can be solved with a little patience and persistence.

5. Ability to interact with Cross-Functional Teams (CFTs)

Interacting with CFTs is one of the most overlooked skills in technical writing. You have to be part investigative reporter, part journalist. You can't be shy about going after certain people to extract information. And you can't be too proud to ask the "dumb technical questions" that make engineers do double-takes. A lot of this interaction can come about if you're lucky enough to simply sit near the CFT members.

1.7 Indicators of Excellence in Technical Communication**Honesty**

Technical Communication should be a true account and your purpose shouldn't be misleading the readers for temporary gains. If honesty is reflected in your communication, then it appears credible and acceptable to the reader.

Clarity

It's an important characteristic of effective technical communication, and with this objective, you would be able to produce a document that conveys a single meaning a reader can easily understand.

Accuracy

Technical writer must record the facts carefully. The slightest factual error can confuse or annoy readers. These mistakes can also affect the validity and credibility of the document.

Comprehensiveness

Technical document should provide all the needed information to the reader. Technical writer should take effort to provide sufficient background information and clarify unfamiliar subjects from a layman point of view. Moreover, comprehensiveness is very crucial because the people who read the document need a complete, self contained communication in order to apply the information safely, effectively and efficiently.

Accessibility

This characteristic will help the reader to get information with much ease. Keeping this in mind, technical documents even though they are lengthy, are made up of small, selectively independent sections with clear cut guidelines.

Brevity

Technical writers are there to convey the information not to impress the readers but to communicate with them. Therefore, technical document should be well edited to avoid verbosity. The longer the document, the more difficult it is to use. Here, the technical writers' challenge is to convey a lot of information in provided little space. In a sense, brevity contradicts clarity and comprehensiveness. Therefore, Technical writers should be very judicious to balance these three indicators to impart effective communication.

Professionalism

Technical writer should create a positive impression of both the content and authors in the readers, and must adhere to the format standards (style sheet) that apply in their organization. This standardized approach brings in uniqueness and professionalism to the communication process.

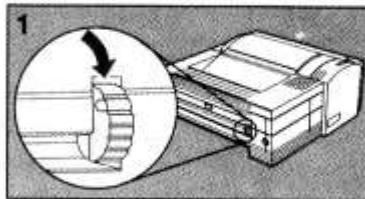
Self Assessment Question

2. Which of the following is not an indicator of excellence in technical communication?
 a) Brevity b) accuracy c) verbosity d) honesty

Technical Writing sample - User Manual for a Computer printer



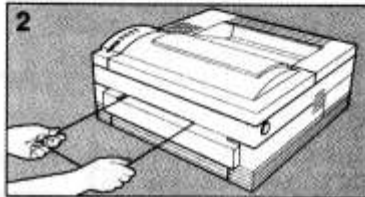
Printing Transparencies



Selecting the Correct Media

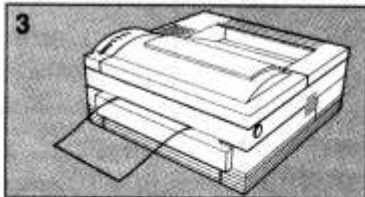
CAUTION

To avoid damaging your printer, use only transparencies designed for use with laser printers. See Appendix B for detailed specifications.

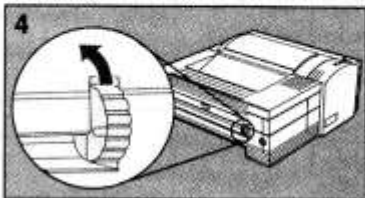


Setting Up the Printer

First, select "manual feed" or "single sheet feed" through your software and send your job to print. Then set up the printer:



- 1 Set the paper path knob to the down position. This allows the transparencies to feed straight out the rear of the printer, reducing film curl.



- 2 Gently insert the transparency film into the manual feed slot until you feel some resistance on the upper left corner. The printer grabs the end of the transparency sheet.

- 3 Let the other end of the transparency hang down from the manual feed slot and rest on the table. The printer then prints the page.

- 4 After printing the transparencies, reset the paper path knob to the up position.

To Avoid Transparency Curl

To avoid transparency curl, grab the transparency as it comes out of the printer and set it on a flat surface to cool.

1.8 Role of Technical Communication in Business and Industry

Technical Writers communicate ideas. They design information, participate in the product development process, and manage complex documentation projects. Business and industry requires the service of technical writers. These include engineering and construction, automotive and aerospace, electronics, biotechnology and robotics firm, computer hardware and software companies, and scientific research and developmental facilities.

The working world depends on written communication, and almost all actions are documented in a modern organization. Here are a few examples of writing within an organization.

- Memos and e-mails
- Travel reports
- Policy and procedure statements
- Project reports
- Progress reports
- Completion reports
- Newsletters
- Business letters
- Sales and marketing literature
- Research reports
- Business articles

1.9 Careers in Technical Communication

In today's customer-centric business model, the very process of acquiring and losing deals depends on the effectiveness of the technical writers. On a rough estimate, there should be at least one technical writer, for 30 programmers. But in spite of their growing need, not much has been done to popularize this profession. Although, technical communication has been in

existence for a long time, its emergence as a niche profession is only a recent development. According to the figures furnished by the Society for Technical Communication (STC) there are roughly 1200/1500 technical writers in India, while US has over a lakh of technical communicators. Many experts cite the lack of awareness as a key reason (both among the corporate and the individuals) to make it a potential career prospect.

Today a technical writer can start with an average salary of about Rs 10,000-14,000 and earn up to Rs 35,000 in 2-3 years. There have also been indications in terms of vertical growth of an individual in the organization. An individual can start at the entry level as a technical communicator, to become a senior technical communicator (2-3 years experience), a writers' team leader (with 5 years of experience) and move on to become the director of technical communications (10 plus years of experience). Besides this, he can also aspire to become a quality analyst or a chief knowledge officer. With so much in offering, the future surely looks bright for the technical writers. Now the time is ripe to take positive steps, in order to work towards giving due status to this unrecognized sector.

1.10 Summary

Technical Communication is meant to fulfill a mission: to convey information to a particular audience or to persuade that audience to a particular point of view. To accomplish these goals, it must be honest, clear, accurate, comprehensive, successible, concise, professional and correct.

1.11 Terminal Questions

1. Explain the Characteristics of Technical Communication.
2. What are the indicators of Excellence in Technical Communication?

1.12 Answers

SAQs

1. a) English
2. c) Verbosity

TQs

1. Refer Sub Unit 1.5
2. Refer Sub Unit 1.7

Fine tune Your Grammar

Nouns: The word that identifies the who, where and what in a language is a noun. Nouns name persons, places, things and feelings.

Kinds of Nouns

1. **Proper Noun:** They are the names of a particular place, person or thing. They name specific or one-of-a-kind items. Proper nouns always begin with capital letters. E.g.: France, Tim, the Ganges, the Eiffel Tower
2. **Common Noun:** They are the names given to every person, place or thing of the same class. They identify the general variety. Common nouns require capitalization only if they start the sentence or are part of a title. E.g.: student, city, river, dog.
3. **Collective Noun:** They are the names given when a number of persons or things are taken together as a whole. E.g.: crowd, flock, swarm.
4. **Abstract Noun:** We cannot see them as the other nouns. They are the names given to qualities, actions and states of being that cannot be felt, seen or heard. E.g.: beauty, charity, laughter, childhood.

Exercise 1: Pick out the nouns in the following sentences:

1. The shopman hasn't opened his shop today.
2. Ravi's grandfather has lost his walking stick.
3. Trees are the kindest things for they do no harm.
4. After the rains, the grass and plants have started growing well.
5. Children are fond of toys and sweets.
6. This is silk. See how shiny and soft it is!
7. Lots of tea is grown in China.

8. Quite a few people follow Buddhism in China.
9. Yangtse-Kiang flows in China, doesn't it?
10. Don't you think that all religions, more or less say the same thing?

Articles: In English, articles may be classified as Indefinite and Definite.

1. **Definite article:** It is used before a noun that is specified. '**The**' is the definite article.
2. **Indefinite articles:** They are used before a noun which is not specified. '**A**' and '**An**' are the indefinite articles.

Definite Article Usage: 'The' is used-

1. before singular and plural nouns when the noun is particular or specific. E.g.: The apple tree is full of fruits. (specific noun –singular).
2. before non-countable nouns that are made more specific. E.g.: The coffee in my cup is too hot to drink.
3. before a noun refers to something unique. E.g.: The theory of relativity.
4. before names of rivers, oceans and seas. E.g.: The Ganges, the Pacific
5. before points on the globe. E.g.: The Equator, the North Pole
6. before geographical areas. E.g.: The Middle East, the West
7. before deserts, forests, gulfs and peninsulas. E.g.: The Sahara, the Persian Gulf, the Black Forest, the Indian Peninsula
8. before certain well-known or sacred books. E.g.: The Mahabharata, The Bible, The Midsummer Night's Dream
9. before an adjective in the superlative degree. E.g.: Nisha is the shortest girl in the office.
10. before certain adjectives to give a plural meaning. E.g. The rich = rich people

Indefinite articles – Usage

- We use 'a' when the noun we are referring to begins with a consonant sound. E.g.: a city, a bird
- We use 'an' when the noun we are referring to begins with a vowel (a, e, i, o, u) sound. E.g.: an apple, an umbrella.

NOTE: *If the noun begins with a consonant sound. (E.g.: university), then we use 'a'. If the noun begins with a vowel sound (E.g.: hour), then we use 'an'. We say "university" with a "y" sound at the beginning as though it were spelt "youniversity". So, "a university" IS correct. We say "hour" with a silent 'h' as though it were spelt "our". Therefore, "an hour" IS correct.*

'A' or 'An' is used –

1. before nouns that introduce something or someone you have not mentioned before. E.g.: I saw an elephant this morning.
2. before singular countable nouns. E.g.: I stepped in a puddle.
3. when talking about one's profession. E.g.: I am an English teacher.
4. before Mr./Mrs./Miss + name to imply that he is a stranger to the speaker. E.g.: A Mr. Smith is outside your office.
5. before a proper noun to make it a common noun. E.g.: Amit is a Shakespeare.
6. before certain uncountable nouns preceded by nouns + of. E.g.: a drop of water, a piece of advice
7. after the words many, rather, such, quite in certain structures. E.g.:
Such a show cannot be arranged now.

'A' or 'An' is not used

1. before names of meals. E.g.: Let us have lunch at 12.30 p.m.

Exception: 'a' is used before names of meals when they are preceded by adjectives. E.g.: She gave me asumptuous dinner yesterday.

Articles are not used

1. with non countable nouns referring to something in general. E.g.:
Coffee is his favourite drink.
2. before names of languages and nationalities. E.g.: English, Indian
3. before names of academic subjects. E.g.: History, Biology
4. before names of cities, towns, states. E.g.: Miami, Seoul
5. before names of streets. E.g.: M.G. Road
6. before names of lakes and bays. E.g.: Lake Titicaca *Exception: 'the' is used with group of lakes. E.g.: the Great Lakes.*
7. before names of mountains. E.g.: Mount Everest
8. *Exception: 'the' is used with mountain ranges. E.g.: the Andes*
9. before names of continents. E.g.: Asia, Australia
10. before names of islands. E.g.: Easter Islands
Exception: 'the' is used with the chain of islands. E.g.: the Andamans
11. before material nouns. E.g. Gold is a precious metal
Exception: 'the' is used with an adjunct which makes the material noun definite. E.g.: The gold we use in India is all imported.

Exercise 2: Fill in the blanks with appropriate articles (a / an / the)

And they lived happily ever after, say ___ fairy tales. Have you ever wondered if they really did? They could have in fairy tales but in reality, we are still chasing happiness and it only gets more elusive by ___ day. Mankind has been united in the conviction that happiness is ___ very desirable state. We are driven by ___ need to be happy behind everything we do. When young, we study well to get good grades so we can be happy with ___ accolades. We grow up; get jobs to earn money, security, status – all for happiness. And then inevitably get into relationships/marriage all again for – happiness.

We chase money, health, growth, fame, power, property and relationships, not for what they are, but because we think they could lead to happiness

Yet, you will acknowledge that this is fleeting happiness. Getting into ___ foreign university is what you always wanted, but leaving your girl friend behind, that totally kills it. Losing weight may transform your life but it means never having 'Death by chocolate' again. Promotions mean no holidays, and high-end cars means gallons of petrol. No matter what or how much you have, nothing seems quite enough. Is there ___ irrefutable, permanent and absolute happiness? Or better, What makes people happy? ___ good bank account, ___ good cook, and ___ good digestion, said Jean Jacques Rousseau.

Answers:**Exercise 1:**

1. shopman, shop
2. Ravi, grandfather, stick
3. Trees, things
4. Rains, grass, plants
5. Children, toys and sweets
6. Silk
7. Tea, China.
8. People, Buddhism, China
9. Yangtse-Kiang, China
10. Religions

Exercise 2: Articles

And they lived happily ever after, say the fairy tales. Have you ever wondered if they really did? They could have in fairy tales but in reality, we are still chasing happiness and it only gets more elusive by the day. Mankind has been united in the conviction that happiness is a very desirable state. We are driven by the need to be happy behind everything we do. When young, we study well to get good grades so we can be happy with the

accolades. We grow up; get jobs to earn money, security, status – all for happiness. And then inevitably get into relationships/marriage all again for – happiness.

We chase money, health, growth, fame, power, property and relationships, not for what they are, but because we think they could lead to happiness

Yet, you will acknowledge that this is fleeting happiness. Getting into a foreign university is what you always wanted, but leaving your girl friend behind, that totally kills it. Losing weight may transform your life but it means never having ‘Death by chocolate’ again. Promotions mean no holidays, and high-end cars means gallons of petrol. No matter what or how much you have, nothing seems quite enough. Is there an irrefutable, permanent and absolute happiness? Or better, What makes people happy? A good bank account, a good cook, and a good digestion, said Jean Jacques Rousseau.

Unit 2

Audience Analysis

Structure

- 2.1 Introduction
 - Objectives
- 2.2 Basic Classification of Readers
- 2.3 Types of Audiences
- 2.4 Research on Readers
- 2.5 Audience Analysis
- 2.6 Audience Adaptations
- 2.7 Audience Profile Sheet
- 2.8 Summary
- 2.9 Terminal Questions
- 2.10 Answers

2.1 Introduction

All technical communication is done with a particular end in mind. The purpose is usually to facilitate the communication of ideas and concepts to the audience, but may sometimes be used to direct the audience in a particular course of action. The importance of the audience is in the notion that meaning is derived from the audience's interpretation of a piece of work. The purpose may be something as simple as having the audience understand the details of some technological system, or to take a particular action using that system.

The identification of the audience affects many aspects of communication, from word selection and graphics usage to style and organization. A non-technical audience might not understand, or worse yet, even read a document that is heavy with jargon, while a technical audience might crave extra detail because it is critical for their work. Busy audiences do not have

time to read an entire document, so content must be organized for the ease of searching, for example by the frequent inclusion of headers, white space and other cues that guide attention. Other requirements vary on the needs of the particular audience.

Objectives

After going through the unit, you will be able to:

- distinguish between the types of audience
- judge the needs of audience in effective technical communication

2.2 Basic Classification of Readers

Readers are often classified into two categories:

2.2.1 Primary Audience: consists of people who have a direct role in responding to your documents. This includes people who use your information in doing jobs. They might evaluate and revise your document, or they might act on your recommendations. For example, Distance Education Learners depending on the Self Learning Materials (SLM) provided by the University for the preparation of University examinations.



2.2.2 Secondary Audience: consists of people who need to know what is being planned, such as sales people who want to know where a new facility will be located, what products it will produce, and when it will be operational. A secondary audience does not have a direct role in responding to your document.

Identification of multiple audiences indicates that multiple concepts may need to be communicated. Pfeiffer and Boogerd suggest planning for this situation by first identifying the following for each audience:

- Purpose
- Needed information
- Educational background

With this information, important needs can be satisfied in a way that caters to all. If this is not possible, audiences may be prioritized by importance, and the most important audiences served first. Remaining audiences can be served by including clearly denoted content within the text, such as the advanced topic sidebars (information in highlight boxes) that frequently occur in users' guides.

2.3 Research on Readers

It is not important to know the real person you are writing for, but rather to have in your mind an archetype of your reader. An obvious starting place to start your research is by observing people from the target audience that you know personally to see what common attributes and attitudes they have. You are often writing for an audience of skilled engineers and technicians, who in all likelihood have a far greater understanding of theory than you have or are ever likely to have. What they want from your writing is clear and easy to find details.

Some of the questions you need to think about at this stage are concerned with finding common factors in their background, for example what is their educational background.

Tools we can use to help us in our research include:

- surveys and questionnaires
- personal experience
- popular opinion and stereotypes
- story telling about users

Without knowing who it is you are writing for, it is easy to be irrelevant. Knowledge of the target audience allows the writer to stay firmly "on message." Your job as a technical writer is to serve others. You are a conduit for information. You have to transfer what is in the heads of the creators of the product, into the heads of the people using the product.

The language, organization, and level of detail you use depend on your reader. Your number one task is to understand what they actually need to know, and how they're likely to best find that information when they need it in their life.

The marketing department usually has a clear idea of the intended buyers of the software. They should be able to describe them to you in some detail, including demographic information and what kinds of similar products they have used in the past. Getting this information is a good first step to understand your audience. If the marketing department doesn't know this information, you may want to take the initiative and contact potential end users so you can interview them. You want to find out:

- Their level of experience with similar products.
- How they intend to use the software.
- The jargon they use in their work.

2.3.1 Environment and Expectations

If your intended audience is completely new to software, you may have to include quite elementary computer instructions in your materials; but most readers today have at least some familiarity with these topics, and there is no need to waste their time repeating it. By finding out how familiar the audience is with similar software, you save your time and the reader's too.

Most people don't buy software because they are interested in the names of all the buttons. Instead, they buy software so they can achieve a goal through completing specific tasks. So your instructions must concentrate on the steps they need to get to their goal.

Self Assessment Question (SAQ)

1. According to Pfeiffer and Boogerd, what has to be identified in planning multicultural situation for each audience?
 - a) Purpose
 - b) Needed information
 - c) Educational background
 - d) all the above

2.4 Types of Audiences

One of the first things to do when you analyze an audience is to identify its type (or types – it's rarely just one type). The common division of audiences into categories is as follows:

Experts: These are the people who know the theory and the product inside and out. They designed it, they tested it, and they know everything about it. Often, experts have advanced degrees and operate in academic settings or in research and development areas of the government and business worlds. The non-specialist reader is least likely to understand what these people are saying-but also has the least reason to try. More often, the communication challenge faced by the expert is communicating to the technician and the executive.

Technicians: These are the people who build, operate, maintain, and repair the materials that the experts design and theorize about. They have a highly technical knowledge as well, but of a more practical nature.

Executives: These are the people who make business, economic, administrative, legal, governmental, political decisions on the material that the experts and technicians work with. If it's a new product, they decide whether to produce and market it. If it's a new power technology, they decide whether the city should implement it. Executives are likely to have as little technical knowledge about the subject as non-specialists.

Non-specialists: These readers have the least technical knowledge of all. Their interest may be as practical as technicians', but in a different way. They want to use the new product to accomplish their tasks; they want to understand the new power technology enough to know whether to vote for or against it in the upcoming bond election. Or, they may just be curious about a specific technical matter and want to learn about it – but for no specific, practical reason.

2.5 Audience Analysis

It's important to determine which of the four categories just discussed the potential readers of your document belong to, but that's not the end of it. Audiences, regardless of category, must also be analyzed in terms of characteristics such as the following:

Background-knowledge, experience, training: One of your most important concerns is just how much knowledge, experience, or training you can expect in your readers. If you expect some of your readers to lack certain background, do you automatically supply it in your document? Consider an example: imagine you're writing a guide to using a software product that runs under Microsoft Windows. How much can you expect your

readers to know about Windows? If some are likely to know little about Windows, should you provide that information? If you say 'no', then you run the risk of customers' getting frustrated with your product. If you say 'yes' to adding background information on Windows, you increase your work effort and add to the page count of the document (and thus to the cost). Obviously, there's no easy answer to this question – part of the answer may involve just how small a segment of the audience needs that background information.

Needs and interests: To plan your document, you need to know what your audience is going to expect from that document. Imagine how readers will want to use your document; what will they demand from it. For example, imagine you are writing a manual on how to use a new microwave oven – what are your readers going to expect to find in it? Imagine you're under contract to write a background report on global warming for a national real estate association – what do they want to read about; and, equally important, what do they *not* want to read about?

Other demographic characteristics: And of course there are many other characteristics about your readers that *might* have an influence on how you should design and write your document – for example, age groups, type of residence, area of residence, sex, political preferences, and so on.

Audience analysis can get complicated by at least two other factors: mixed audience types for one document, wide variability within audience, and unknown audiences.

More than one audience: You're likely to find that your report is for more than one audience. For example, it may be seen by technical people (experts and technicians) and administrative people (executives). What to do? You can either write all the sections so that all the audiences of your document can understand them. Or you can write each section strictly for

the audience that would be interested in it, then use headings and section introductions to alert your audience about where to go and what to stay out of in your report.

Wide variability in an audience: You may realize that, although you have an audience that fits into only one category, there is a wide variability in its background. This is a tough one – if you write to the lowest common denominator of reader, you're likely to end up with a cumbersome, tedious book-like thing that will turn off the majority of readers. But if you don't write to that lowest level, you lose that segment of your readers. What to do? Most writers go for the majority of readers and sacrifice that minority that needs more help. Others put the supplemental information in appendixes or insert cross-references to beginners' books.

2.6 Audience Adaptations

Analyze your audience until you know them better than you know yourself. What good is it? How do you use this information? How do you keep from writing something that will still be incomprehensible or useless to your readers?

The business of writing to your audience may have a lot to do with in-born talent, intuition, and even mystery. But there are some controls you can use to have a better chance to connect with your readers. The following "controls" have mostly to do with making technical information more understandable for non-specialist audiences:

Add information readers need to understand your document: Check to see whether certain key information is missing – for example, a critical series of steps from a set of instructions; important background that helps beginners understand the main discussion; definition of key terms.

Omit information your readers do not need: Unnecessary information can also confuse and frustrate readers – after all, it's there so they feel obligated to read it. For example, you can probably remove theoretical discussion from basic instructions.

Change the level of the information you currently have: You may have the right information but it may be "pitched" at too high or too low a technical level. It may be pitched at the wrong kind of audience – for example, at an expert audience rather than a technician audience.

Add examples to help readers understand: Examples are one of the most powerful ways to connect with audiences, particularly in instructions. Even in non-instructional text, for example, when you are trying to explain a technical concept, examples are a major help – analogies in particular.

Change the level of your examples: You may be using examples but the technical content or level may not be appropriate to your readers. Homespun examples may not be useful to experts; highly technical ones may totally miss your non-specialist readers.

Change the organization of your information: Sometimes, you can have all the right information but arrange it in the wrong way. For example, there can be too much background information up front (or too little) such that certain readers get lost. Sometimes, background information needs to be woven into the main information – for example, in instructions it's sometimes better to feed in portions of background at the points where they are immediately needed.

Strengthen transitions: It may be difficult for readers, particularly non-specialists, to see the connections between the main sections of your report, between individual paragraphs, and sometimes even between individual sentences. You can make these connections much clearer by adding *transition words* and by echoing *key words* more accurately. Words like

"therefore," "for example," "however" are transition words – they indicate the logic connecting the previous thought to the upcoming thought. You can also strengthen transitions by carefully echoing the same key words. You'll learn more about these in unit 5.

Write stronger introductions – both for the whole document and for major sections: People seem to read with more confidence and understanding when they have the "big picture" – a view of what's coming, and how it relates to what they've just read. Therefore, make sure you have a strong introduction to the entire document – one that makes clear understanding of the topic, purpose, audience, and contents of that document. And for each major section within your document, use mini-introductions that indicate at least the topic of the section and give an overview of the subtopics to be covered in that section.

Create topic sentences for paragraphs and paragraph groups: It can immensely help the readers immensely to give them an idea of the topic and purpose of a section (a group of paragraphs) and in particular to give them an overview of the sub-topics about to be covered.

Change sentence style and length: How you write – down at the individual sentence level – can make a big difference too. In instructions, for example, using imperative voice and "you" phrasing is vastly more understandable than the passive voice or third-personal phrasing. For some reason, personalizing your writing style and making it more relaxed and informal can make it more accessible and understandable. Passive, person-less writing is harder to read – put people and action in your writing. Similarly, go for active verbs as opposed to 'be' verb phrasing. All of this makes your writing more direct and immediate – readers don't have to dig for it. (See Unit 5, Technical Writing style)

Work on sentence clarity and economy: This is closely related to the previous "control" but deserves its own spot. Often, writing style can be so wordy that it is hard or frustrating to read. When you revise your rough drafts, put them on a diet-go through a draft line by line trying to reduce the overall word, page or line count by 20 percent. (See Unit 5, Technical Writing style)

Use more or different graphics: For non-specialist audiences, you may want to use more graphics – and simpler ones at that. Writing for specialists and experts tends to be less illustrated, less graphically attractive – even boring to the eye! Graphics for specialists tend to be more detailed, more technical. In technical documents for non-specialists, there also tend to be more "decorative" graphics – ones that serve no strict informative or persuasive purpose at all.

Break text up or consolidate text into meaningful, usable portions: For non-specialist readers, you may need to have shorter paragraphs. Notice how much longer paragraphs are in technical documents written for specialists. (Maybe a 6- to 8-line paragraph is the dividing line.)

Add cross-references to important information: In technical information, you can help non-specialist readers by pointing them to background sources. If you can't fully explain a topic on the spot, point to a book or article where it is.

Use headings and lists: Readers can be intimidated by big dense paragraphs of writing, uncut by anything other than a blank line now and then. Search your rough drafts for ways to incorporate headings – look for changes in topic or subtopic. Search your writing for listings of things – these can be made into vertical lists. Look for paired listings such as terms and their definitions – these can be made into two-column lists. Of course, be careful not to force this special formatting – don't overdo it.

Use special typography, and work with margins, line length, line spacing, type size, and type style: For non-specialist readers, you can do things like making the lines shorter (bringing in the margins), using larger type sizes, and other such tactics. Certain type styles are believed to be friendlier and more readable than others.

Understanding Multiculturalism: Our workforces are becoming increasingly diversified culturally and linguistically, and our business are relying more on exports. Technical writers need to communicate effectively with various groups like non-native English speakers and groups with different values, custom and beliefs.

These are the kinds of "controls" that professional technical writers use to fine tune their work and make it as readily understandable as possible. And in contrast, it's the accumulation of lots of problems in these areas – even seemingly minor ones – that add up to a document being difficult to read and understand.

2.7 Audience Profile Sheet

To analyze your audience, you have to create an audience profile sheet. You could then fill out the sheet for each primary and secondary reader if they are few in number. This helps technical writers to determine the best approach for their messages. Once they receive the profile sheet, technical writers make changes in the documents to suit the type of audience.

AUDIENCE PROFILE SHEET

Reader’s Name:

Reader’s Job Title:

Kind of Reader: Primary		Secondary	
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Education:

Professional Experience:

Job Responsibilities:

Personal Characteristics:

Personal Preferences:

Cultural Characteristics:

Attitude toward the Writer:

Attitude toward the Subject:

Expectations about the Subject:

Expectations about the Document:

Reasons for Reading the Document:

Skim it		Study it		Read a portion of it		Which portion?	
Modify it and submit it to another reader							
Attempt to implement recommendations							
Use it to perform a task or carry out a procedure							
Use it to create another document							
Other		Explain					

Way of Reading the Document:

Reading Skill:

Reader’s Physical Environment:

Self Assessment Question (SAQ)

2. To analyze your audience, _____ plays a vital role.
- a) Personal experience
 - b) Field Survey
 - c) Audience Profile Sheet
 - d) Opinion Poll

2.8 Summary

The identification of the audience affects many aspects of communication, from word selection and graphics usage to style and organization. Therefore, proper audience analysis by considering the types of audience, audience research, audience adaptability, will result in effective technical communication.

2.9 Terminal Questions (TQ)

What do you mean by

1. What's Audience Analysis? Explain its significance in Technical Communication
2. Explain various audience adaptations?

2.10 Answers

SAQs

1. d) All the Above
2. c) Audience Profile Sheet

TQs

1. Refer Sub Unit 2.5
2. Refer Sub Unit 2.6

Fine Tune Your Grammar

Pronoun is used as a proxy to the proper noun to avoid repetition of the nouns.

Suresh said that Suresh bought a new bike.

In this case repetition of the proper noun 'Suresh' becomes redundant. It could be replaced by the pronoun 'he.' *Suresh said that he bought a new bike.*

You may come across usage of pronouns that are quite confusing.

I hit myself with the ball.

I myself hit the ball.

Both the sentences have the pronoun 'myself' but they mean different. The first sentence uses reflexive pronoun, whereas the second sentence uses emphatic pronoun.

Reflexive Pronouns: Here the action reflects back on the noun. When the subject and object refer to the same person, reflexive pronoun is used.

I must blame myself for this.

Behave yourself.

He killed himself.

Emphatic Pronouns: They are used to emphasize the subject of the sentence.

I myself will take you there

You yourself are to be blamed

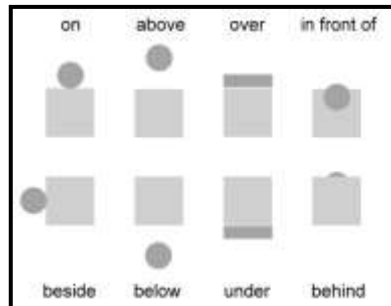
Exercise 1: Pick out the Pronouns from the sentences given below:

- i) I am afraid you may have to wait.
- ii) Lubna come in. She was quite good looking.
- iii) Have you been to Tokyo? Yes, it was very crowded.

- iv) It is good to go to bed early and rise early.
- v) One should be practical.
- vi) Her parents are in Singapore and so are mine.
- vii) She stretched herself flat on the sofa.
- viii) These are not mine but those are.
- ix) Someone should take up the responsibility.
- x) Ting and Tang are jealous of each other.
- xi) Look at the man in the car. He is the person who helped me in my difficulties.
- xii) Who is the woman at the gate?

Prepositions

Prepositions are the words, which tell us about the relations of the nouns, pronouns, and adjectives in a sentence. Their position is before (pre) the noun. Hence they are said to govern the noun. The noun which follows is said to be the object of the preposition.



Relations Expressed by Prepositions

1. **Preposition of Time:** on, in, at, for, before, after, until, till, between, by, upto.
E.g.: She was healthy **till** yesterday.
2. **Preposition of Place:** to, at, from, away, on, onto, of, in, into, out, upon, inside, within, by, over, above, on top of, behind, in front of, below, beneath, across, through, all over, throughout, between, among. E.g.: Where do you come **from**?
3. **Preposition of Method and Manner:** by, with. E.g.: The boys skipped going to school **with** audacity.

4. **Preposition of Reason and Purpose:** with, of, for. E.g.: I rented a house **for** my holidays
5. **Preposition of Possession:** of, with, by. E.g.: The tomb **of** Akbar is in Sikandarabad.
6. **Preposition of Direction and Motions:** into, towards, up, round, across.
E.g.: They climbed **into** the lorry.
7. **Preposition of Contrast:** despite. E.g.: **Despite** his mistakes, he is a sincere worker.

Have these prepositions confused you? Check out their proper usage.

- **beside, besides**
 - a) The house is beside the river. (by the side of)
 - b) Besides being good at Tennis, he is also an excellent player of Golf. (in addition to/ moreover)
- **since, for**
 - a) He has been absent since Monday last. (point of time)
 - b) He was absent for four days. (length or period of time)
- **between, among**
 - a) I have to choose between the two pictures.(two persons/things)
 - b) This is the custom among the tribes. (more than two)
- **by, with**
 - a) He was killed by a servant. (doer of the action)
 - b) He was killed with a knife. (instrument of action)
- **in, at**

He lives at Juhu in Mumbai. ('at' - smaller area/ 'in'- bigger area)
- **in, into**
 - a) He is in bed (indicates rest or motion inside anything)
 - b) He fell into the well (motion towards the inside of anything)

- **on, upon**

- a) He sat on a chair (things at rest)
- b) He lives on his maternal uncle (denoting support)
- c) I wrote books on philosophy (denoting concern)
- d) He jumped upon the horse. (Things in motion)

- **in, within**

- a) The loan will be repaid in a year. (end of a period of time)
- b) The loan will be paid within a year (any time before the specified period.)

- **over, above**

- a) They saw the peaks towering above them (higher)
- b) We hung the picture over the fire place (vertically above)

Exercise 2: Use the suitable preposition in the blanks:

- i) It is almost time. Hurry up! The train will leave _____ five minutes.
- ii) _____ the end of April, we go _____ holidays.
- iii) _____ going to work _____ the morning. I take a heavy breakfast.
- iv) My father leaves me _____ school his way to office _____ scooter.
- v) Beautiful resorts are coming up _____ the sea.
- vi) You can hang grandfather's portrait _____ the shelves.
- vii) Do you mind taking your _____ the table.
- viii) When I saw my friend, I was walking _____ the road _____ my dog.
- ix) A beautiful butterfly flew _____ our window and landed _____ my bed.
- x) Could you help me put this film _____ the camera?

Answers**Exercise 1: Pick out the Pronouns from the sentences given below:**

- i) I, you
- ii) She
- iii) You, it
- iv) No pronoun
- v) One
- vi) Her, mine
- vii) She, herself
- viii) These, mine, those
- ix) Someone
- x) each other
- xi) He, me, my
- xii) Who

Exercise 2:

- i) It is almost time. Hurry up! The train will leave in five minutes.
- ii) At the end of April, we go on holidays.
- iii) While going to work in the morning. I take a heavy breakfast.
- iv) My father leaves me at school on his way to office on scooter.
- v) Beautiful resorts are coming up by the sea.
- vi) You can hang grandfather's portrait above the shelves.
- vii) Do you mind taking your legs off the table.
- viii) When I saw my friend, I was walking across the road with my dog.
- ix) A beautiful butterfly flew through our window and landed on my bed.
- x) Could you help me put this film into the camera?

Unit 3

Research Interviews

Structure

- 3.1 Introduction
 - Objectives
- 3.2 Research Tools
- 3.3 Conducting SME Interviews
 - Pre-Interview
 - During Interview
 - After the Interview
- 3.4 Validation
- 3.5 Tips for collecting information from SMEs
- 3.6 Summary
- 3.7 Terminal Questions
- 3.8 Answers

3.1 Introduction

Interviewing subject matter experts (SMEs) is one of the most common and useful methods for obtaining the information needed to create quality documents. Successful SME interviews require careful research and preparation in advance. During the interview, good listening skills, critical analysis, and the ability to maintain control of the range and depth of the interview with appropriate tact are crucial to successful outcomes. After the interview, give prompt attention to notes and any required follow-through. When working with hostile SMEs or those with poor communication skills emphasize the strengths of the relationship and develop strategies to work around any weaknesses.

Objectives

After going through the unit, you will be able to:

- identify the research tools in Technical Communication
- organize interview sessions in an effective manner

3.2 Research Tools

There are many places we can look to in order to prepare ourselves for the interview.

The first place we can go to find information is any previous product documentation which is available. This is important to be aware of because we do not want to ask developers being questions, which have already been answered elsewhere. It can also provide useful information in the situation where we are writing about an update or amendment to a product as we can simply ask if the situation is still the same.

One of the most valuable tools for background reading is of course the websites and portals in Internet. These sites are a gateway to background information, which often the developer will assume you already know. So, be prepared for the developers' expectations and meet them.

When you are preparing software-related documentation, one of the most useful preparation techniques is to use the software itself, assuming of course it is available to you. By experimenting it is possible to formulate a reasonable assumption about how something works.

3.2.1 Know your SME

The SMEs we are most likely to come across when writing our documentation can be described using Alan Cooper's term "Homo Logicus", the following are typical traits of such a person:

- Intellectually competitive
- Trade simplicity for control
- Enjoy mastering complexity

- Often contemptuous of “users”
- Lose sight of big picture

3.3 Conducting SME Interviews

Perhaps the most universal and basic method for a technical communicator to gather information is a face-to-face interview with a subject matter expert (SME). SMEs may be engineers, developers, programmers, operators, clerks, or customer support personnel. They are the people who have experience with and knowledge of a particular system, application, product, process, or task that you need to learn about. There is a wide variety of factors that can affect SME interviews. In most cases, the SME has a job to do beyond taking time out of his or her busy day to talk with you. It is therefore critical to get the right information and optimize your interview time.



(This is particularly crucial if you work on smaller projects or if you are an off-site consultant; in these cases your contact with your SME may be restricted even further.) Given below are steps you can take before, during, and after the interview to maximize its effectiveness, as well as some tips for

handling problematic SME interviews and relationships. The majority of these techniques will apply whether you are a freelancer, a consultant, or a captive writer.



3.3.1 Pre-Interview

Before the interview begins, there are things that you can do to build a good foundation for a productive interview experience.

Define your objectives

Define the purpose of the interview. Are you interviewing to identify problem areas within a process? Or are you documenting the steps a user performs to complete a task? Once established, the purpose will help set the scope for your interview. You should also try to establish the expected or needed level of detail for the final product. Doing so on the front-end will ensure that you ask the right questions and at the right level of detail. (For example, a policy-level document requires more general information than a work instruction, which requires more explicit step-by-step detail.)

Research the subject matter

Review any available background material before the interview. Try to get copies of any documentation related to the task, department, company, product, or industry. Flow charts, product data sheets, and even training materials can all be valuable sources of information. The more background information you have going into the interview, the better the questions you will be able to ask.

You should also compile a list of questions or an outline of topics you want to discuss during the interview. This will keep you on track during the interview. (It also helps ensure that you do not forget any important items.) Group your questions by subject. This enables you to cover a topic in its entirety and enhances the perception that you are prepared.

Assemble your interview “toolkit”

Use common tools to stay organized during the interview, such as paper clips, binder clips, folders, highlighters, Post-it Notes, and pens with different colors of ink. These tools will help you keep your interview notes and attachments organized, so make sure you have them handy and ready to use.

Be on time for the interview

Show respect for the SME’s busy schedule by not making him or her wait on you to arrive at the interview. This is important whether the SME works for your company or for a client company. Your arrival at the interview will be the SME’s first impression of you (and your company). Make sure that impression conveys your professionalism. If you are traveling to the interview, be sure to get good directions and leave yourself plenty of time in case you encounter unexpected traffic.

3.3.2 During the Interview

Often, the face-to-face interview affords you the best opportunity to get content information for your documentation project. (In some cases, the interview may be the only opportunity you will have.) It is important to

manage the interview flow so that you will have the time to cover the questions you need to get answered.

Use active listening skills

This technique is not as easy as it sounds. Hearing is not the same as listening. Hearing is the perception of sound, whereas listening is attention to what is being said. Active listening requires that you give the speaker your complete and undivided attention. When you listen actively, you are focused on listening, not talking. Do not get distracted by mentally planning your next question so that you miss the SME's response to your current question.

Ask open-ended questions

These are questions that require more detailed answers than a "yes" or "no" response. Open-ended questions start with words such as "how," "why," or "what." An example of a closed-ended question would be, "Do you implement safety checks in the manufacturing process?" The obvious answers to this question would be "yes" or "no." An alternative open-ended question that would prompt the SME for more detail would be, "How do you implement safety checks in the manufacturing process?"

Politely controlling the interview

Controlling the flow of the interview is always important, but especially so when you have tight time constraints. If the SME gets off-track, bring him or her back to the topic by asking pointed, specific questions. Be careful not to antagonize the SME in the process. You may need to continue to work with the person on other projects and bad feelings could taint future interaction. Also, remember that you can offend not only with words, but also with your tone of voice and impatient gestures. It is also important to control the environment of the interview as much as possible. If the area in which you are interviewing is distracting (for example, if the SME is receiving

numerous phone calls or other employees are constantly interrupting the interview), ask if there is another location, such as an empty office or conference room, where you can continue the interview. In some cases, such as when the interviewee needs to use their computer to demonstrate a task, you may be tied to a certain location. However, you can try other tactics like asking if the interviewee can put their phone calls directly into voicemail. Ultimately, you may be forced to make the best of a bad situation.

Paraphrase information and repeat it back to the SME

This is particularly helpful when covering complex material. Paraphrasing reinforces your understanding of the information. If you cannot repeat the information in your own words, you probably do not understand it well enough to write about it. This is a definite sign that you need to ask more questions about the subject matter.

Use critical thinking skills to identify gaps in the information

The SME may not be able to explain the information in a logical sequence, but if you mentally (or verbally) rearrange the information into a chronological or sequential order, you are more likely to spot any gaps in the process flow. This is critical for task- or process related documentation. This technique works well when combined with the paraphrasing technique discussed above.

Be accurate

Make sure you get the correct spelling of names, job titles, systems, departments, etc. Inaccuracies in the product reflect badly on the writer even though the error may have resulted from incorrect information provided by the SME. This more than anything, will add to or detract from your reputation as a technical writer.

Organize your materials

Use paper clips, binder clips, folders, Post-it Notes, highlighters, pens with different colors of ink, and other tools as appropriate help you keep your interview notes and attachments organized. It is helpful to mark areas of my notes where you need to go back and follow up or clarify information with the SME later in the interview. An example of this is the point at which a procedure branches. You will probably need to document both branches of the procedure, but it is much easier to follow one path at a time.

Use highlighters or sticky notes to mark references in the notes to forms and exhibits you need to collect after the interview.

An alternate method of doing this is to keep a running list of the items you need to get. Either method works, just be sure you try to get those items before you leave the interview, while you have the SME's attention and while the material is fresh.

Don't make promises to the SME that you are not authorized to make

Do not promise a draft or a finished product to the SME by a specific date unless you have consulted with the project or product manager and the rest of the development team. This will create problems by setting up unrealistic expectations.

If you are a consultant, do not promise services to the SME that may go beyond the scope of the contract or budget. If appropriate, discuss any questionable requests with your project manager. Any services that fall outside the scope of the project (and budget) may require a new contract or additional fee negotiation.

Closing the Interview

At the end of the interview, there are still a few things you can do to reinforce success. Ideally, at this point you and the SME have established a

good working relationship and you feel pretty good about the information you got during the interview.

Thank the SMEs for their time

Commonly, SMEs are assigned by their bosses to assist writers with projects. Even though the SMEs may not benefit directly from the end product. You have to thank them for the time spent with you for the above mentioned task.

Ask for permission to follow up

By asking permission to follow up, you can determine whether the SME is open to additional contact. If the SME grants your request for follow-up questions, discuss how future contact should be handled. The SME may prefer to handle your questions by e-mail rather than by phone, or you may collectively decide to embed the questions in the appropriate location of the draft document, assuming that the SME will get a chance to review the draft.

Self Assessment Question (SAQ)

1. Which of the following type of questions are very significant in an SME interview
a) Close Ended b) Open Ended c) Plain d) Argumentative

3.3.3 After the interview

The following techniques mostly deal with follow-through, and it goes without saying that follow-through is critical in technical writing.

Review your notes while the interview is fresh

Immediately after the interview, fill in any gaps in your interview notes and decipher any cryptic notations. If you need to organize your materials better, now is the time to match pages of notes with the relevant screen prints or exhibits.

Schedule follow-up as necessary

If there are a significant number of follow-up questions or if the questions are complex, you may want to try to schedule a follow-up phone interview with the SME. Now that the interview is successfully behind you and you have all the information you need, you can begin drafting your document. With the right information and good organization of that information, writing the draft should be trouble-free.

Problem Interviews

Optimally, the writer/SME alliance will be a cooperative, symbiotic relationship. However, this is not always the case. In the real world, any number of factors – personality clashes, lack of commitment to a project, or even inadequate communication skills – can inhibit the effectiveness of the writer/SME relationship. An uncooperative or inarticulate SME can make your job as a writer unnecessarily difficult. Moreover, the quality and skill level of SMEs vary greatly and often the technical writer has little control over which SME is assigned to act as a resource on his or her project. However, even with a less-than-stellar SME there are some things you can do to improve the odds of success. If you work on an ongoing basis with an SME who has unsatisfactory communication skills, you may be able to establish an adequate working relationship by identifying your SME's weak points and learning to work around them. For example, if an SME is a conceptual thinker and not very detail-oriented, you could focus on drawing out the specifics of the conceptual issues discussed during the interview. You could also ask to see examples that support those discussion points.

A successful SME interview is achievable through preparation and forethought, organization, and proper management of the interview process. Not all of the techniques presented here will apply to every interview situation; however, most will apply to the average interview.

3.4 Validation

Once you have interviewed the SME and created your documentation based on the information chunks that you have gathered, it is important to validate that information.

Validation is a process that ensures that the information you have written is accurate and, most importantly, that it works.

Providing accurate information is one of the most important tasks in technical writing. The first line of validation is, naturally, self-validation. This is particularly true when you are writing documentation for software that you have access to and are able to test the information in the software environment first hand.

It is also a good idea to consult a fellow technical writer remember that no one person knows everything there is to know about writing documentation. A second set of eyes may notice things that have slipped through undetected because of your familiarity with the text.

Having the SME validate your work is also a useful approach. This is especially true in our situation where the SME is practically the same as our target audience. However, in more general technical writing this approach can be detrimental to the process of writing for the target audience. The developer is a key resource for validating the veracity of what is written, but never for commenting on the style.

Characteristics of Good information

There is no shortage of information. The Challenge is to find good information, and you ensure the available information is a good one, if it approves the following criteria like accuracy, unbiased, comprehensiveness, currency and clear. (Detailed Explanation in Unit 1)

3.5 Tips for collecting information from SMEs

- Don't send e-mails asking for technical explanations. Either call the SME or go over to his or her cube and ask a few questions.
- Set up official meetings with SMEs to ask all the questions you have. People may be busy, but they can rarely escape an official meeting if you set it up.
- If you can sit near an SME, one technique that works well is to wait until you see them entering a "dead" state (e.g., they're waiting for something to install, or they can't figure something out, or they're finished with something). Timing is everything. Ask a question at that time, and then ask another. It might get them going on a bit longer than they had planned.
- Ask to look over their shoulder and watch what they're doing. I suspect that many SMEs relish their techie knowledge, and this is one way to ingratiate yourself by inundating their senses with indirect adulation.
- To get an SME to review a document, set a due date and call a meeting at which the SME is required to deliver his or her review. If you just send the document and ask for a critique/review, it may never come.
- Although you can always buy an SME lunch, it's sometimes hard to keep the focus on work. If you carpool, you can ask the SME questions in the car, where he or she doesn't have access to a computer.

Self Assessment Question (SAQ)

2. _____ is a process that ensures that the information you have written is accurate and functional.
- a) Validation b) Research c) Tooling d) Reading

3.6 Summary

Interviewing Subject Matter Experts (SMEs) is an important method for obtaining information needed to create quality documents in Technical Communication. Technical Communicator should be critical in every step,

starting from the pre interview sessions to validation of Information to ensure what he or she has gathered is persuasive and effective.

3.7 Terminal Questions

1. Explain the preparatory stage in SME Interviews.
2. Prepare notes on Post Interview Session and Validation.

3.8 Answers

SAQs

1. b) Open Ended Questions
2. a) Validation

TQs

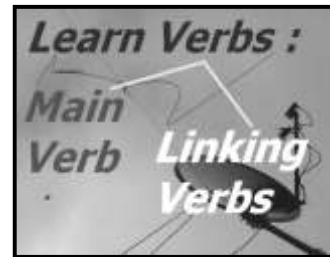
1. Refer Sub Unit 3.3.1
2. Refer Sub Unit 3.3.3 & 3.4

Fine tune Your Grammar**Verbs**

A verb indicates the action done by the subject. E.g.: He arrived late.

Verbs can be categorized into two groups:

1. Main verb: This tells us of what exactly happens. They are also called the 'action words.' E.g.: Srinivas went to his village. The word 'went' tells us what the subject 'Mohan' has done.
2. Auxiliary verbs: They indicate the number and tense in the sentence. They are also called 'helping verbs' or 'linking verbs.' E.g.: Mohan did not go with him. The helping verb 'did' decides the time of action. So the main verb will be in the original form of 'go'.

**Verb – Tenses**

Tense refers to the time of action. With the change of tense, the form of the main verb also changes.

Present Tense: ***Simple Present, Present Continuous, Present Perfect, Present Perfect Continuous***

1. **Simple Present:** (Subject + V1 (present)

- It is used to indicate a regular or habitual action and permanent or verifiable truths/facts.

E.g.: Mary goes to school every day (regular action)

Henry always swims in the evening (habitual)

The sun rises in the east. (permanent truth)

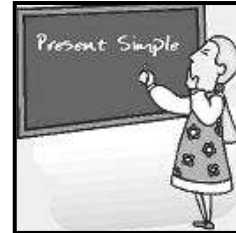
- It is used to express a planned future event/actions, exclamatory statements with 'here' and 'there'.

E.g.: We go to New Delhi next Thursday
(planned future event)

Here comes the great player of the year!

- It is used to indicate verbs of perception.

E.g.: I hear someone sing.



2. **Present Continuous:** (Subject + {is, am, are}+V1 + ing)

- It is used to indicate present time when an action is going on.
E.g.: The secretary is typing the letter now.
- It is used to indicate the action in progress and will be continued, but not necessarily at the moment of speaking.
E.g.: My son is drawing scenery.
- It is used to indicate the actions that have been arranged to take place in the near future and one's immediate plans.
E.g.: We are going to a party this evening.
- The following verbs are never used in the continuous forms (with 'ing') see, hear, smell, notice, understand, have, believe, hate, need, love, appear, like, seem, sound, want, taste, wish, own, notice, desire, refuse, forgive, care, admire, mean, remember, recall, forget, belong, possess, contain, consist, keep, seems, cost.
- When some of the above verbs are used in the continuous tense, their meanings change.
E.g.: I have a house at Colaba.

The professor is having the class in Room. 2 (taking)

3. **Present Perfect:** (Subject+{have, has}+V 3 (verb in the past participle))
- a. It indicates an action that has happened at an indefinite time in the past.
- E.g.: Maria has seen this movie three times.
We haven't written our reports yet.
- It is used to indicate actions that have started in the past and are continuing at present.
E.g.: I have been sick for a long time.
 - It is also used to show the activities completed in the recent past.
E.g.: My father has just left.
 - We should not use present perfect tense when the time is specified.
E.g.: I have read this book last week (**incorrect**)
I read this book last week (**correct**)
4. **Present Perfect Continuous:** (Subject + {have, has}+ been +V1 + ing)
- a) It indicates an action that began in the past and still occurring in the present.
- E.g.: He has been working in Washington for 5 years.

Past Tense: *Simple Past, Past Continuous, Past Perfect, Past Perfect Continuous*

1. **Simple Past:** (Subject + V2 {verb in the past})
- a) It is used for a completed action that had happened in the past. It also indicates habits of the past.

E.g.: Bob went to America last year.

We always played together.



2. **Past Continuous:** (Subject + {was, were} + V1 + ing)

- It indicates an action, which was occurring in the past and was interrupted by another action.

E.g.: Seema was watching the Television when her brother called.

- It describes two or more actions going on at the same time. The clauses are usually connected by the conjunction 'while'.

E.g.: While Maya was watching the movie, Mark was playing hockey.

- It expresses an action that was in progress at a point of time in the past, having begun before that point and probably continuing after it.

E.g.: I was watching cricket at 8.00 in the morning.

3. **Past Perfect:** (Subject + {had} + V3 {past participle})

- a) It is used to indicate an action that happened before another action in the past. Usually two actions are mentioned in the sentence.

E.g.: Ram had gone to the store and brought some groceries.

(Past Per.)

(Sim. Past)

4. **Past Perfect Continuous:** (Subject + {had} + been +V1 + ing)

- a) It is used to convey an action which happened in the past and continued for certain time.

E.g.: Ramu had been working at the university before he retired.

Future Tense: *Simple Future, Future Continuous, Future Perfect, Future Perfect Continuous*

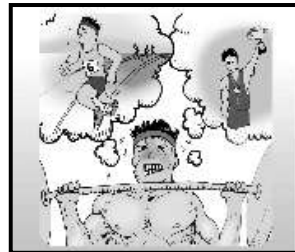
1. **Simple Future:** (Subject + will/shall + V1)

- a) It is used to express the speaker's opinions/assumptions about the future.

E.g.: They will wait for us.

- It is used for future habitual actions.

E.g.: Birds will build nests.



- It is used in sentences containing clauses of condition, time and purpose.

E.g.: If I drop this glass, it will break.

2. **Future continuous:** (Subject + will/shall + be+ V1+ ing)

- It is used to express an action as going on at some time in the future.

E.g.: I shall be playing piano in the concert.

- It is used to express future without intention.

E.g.: I will be helping Marie tomorrow.

3. **Future Perfect:** (Subject + will/shall/ + have + V3)

- It is used for an action which at a given future time will be in the past. It is usually used with a time expression 'by then', 'by that time'.

E.g.: By the end of next month he will have been here for ten years.

4. **Future Perfect Continuous:** (Subject+ will/shall + have +been+V1 +ing)

- It can be used instead of future perfect tense (when the action is continuous).

E.g.: By the end of next month he will have been living here for ten years.

- It can also be used when the action is expressed as a continuous action.

E.g.: By the end of the week he will have been training pupils for ten years.

* However, if we mention the number of pupils, we must use future perfect.

E.g.: By the end of the week he will have trained 5000 pupils for ten years.

Unit 4

Technical Writing Structure

Structure

- 4.1 Introduction
 - Objectives
- 4.2 The Importance of Information Structures
- 4.3 Understanding Role of Description
 - Structure of object and Mechanism Description
 - Structure of Process Description
- 4.4 Hierarchical Structure
 - Horizontal and Vertical Structure
 - Linear and Non Linear Structure
 - Structural Clash
 - Information Chunk
- 4.5 Summary
- 4.6 Terminal Questions
- 4.7 Answers

4.1 Introduction

Most things can be described in terms of structure and function – political systems, body organs, games, and systems. Structure is Platonic in the sense that it approximates an ideal form. Function is Aristotelian, in that it describes the uses we have for things. A Platonist might describe a horse as a beast with four legs, a tail, and a long back. An Aristotelian could describe the same horse as a beast for riding and even go a step further to give instructions for riding the beast.

Technical writers combine both philosophies in their everyday work. It's just another thing that makes technical writing such an interesting profession.

Objectives

After going through the unit, you will be able to:

- identify the importance of Information Structures
- organize information in technical communication

4.2 The Importance of Information Structures

Data without structure is not very useful. How do you find what you're looking for? What's important, and what is trivial? When you read about a subject, you expect some kind of organization that saves you time and effort in learning. If it is not organized, you will quickly give up.

Put the most important information first. What is most important? That depends on your audience analysis. Generally, warnings come first. Most introductions are a waste of time for the technical reader. They don't read from start to finish, but rather search for a particular chunk of information.

So your index, table of contents, or other navigational aids should come first. Assume your readers are intelligent enough to find their way if your organization is clear and consistent.

4.2.1 Descriptions versus Instructions

Structures have descriptions. Functions have instructions. When you describe a horse, you list all the components that make up the horse. You may not even need a specific horse in mind, but can define what a horse is in abstract terms. Give your audience the information required to identify a horse. When you give someone instructions in riding a horse, you should start with a description of the temperament of that horse, and how to use the saddle, reins, and stirrups the horse is wearing. Give your audience the information required to take advantage of the horse's function... riding.

Self Assessment Question (SAQ)

1. Structures have _____ while functions have Instructions
a) Inscription b) Verticality c) Description d) Linearity

4.3 Understanding the Role of Description

Technical communication is filled with descriptions – verbal and visual representations of objects, mechanisms, and processes.

Objects: This word covers an enormous range of things from physical sites such as mountains to synthetic artifacts such as hammers.

Mechanisms: It's a synthetic object consisting of a number of moving, identifiable parts that work together as a system. For example, a television set.

Processes: A process is an activity that takes place over time. For example, how plants perform photosynthesis. Furthermore, description of processes differ from instructions, as it explains how something happens where as instruction tells us how to do something.

Description of objects, mechanisms and processes appear in virtually every kind of technical communication. Before you begin to write a description, consider carefully how the audience and purpose of the document will affect the way you write it.

4.3.1 The Structure of Object and Mechanism Description

Object and mechanism description have the same basic structure, and the word “item” refers to both object and mechanism. Most descriptions of items have a four – part structure:

1. Title or section heading
2. General introduction that tells the reader the definition of item.
3. Part-by-part description of the item

4. Conclusion that summarizes the description and explains how the part works together.

Structural Element	Purpose
1. Title or Section Heading	If the description of the item (object / mechanism) is to be a separate document, give it a title. If it is a part of the body, give it a section heading. In either case, clearly state the subject and indicate whether the description is general or particular.
2. General Introduction	Provides the basic information that your reader will need to understand the detailed description that follows. A general introduction usually answers the following five questions <ol style="list-style-type: none"> 1. What is the item? 2. What is the function of the item? 3. What does the item look like? 4. How does the item work? 5. What are the principal parts of the item? <p>The information provided in the introduction generally follows this pattern, focusing on the item's function, appearance, operating principle and components.</p>
3. Part-by-Part Description	It is essentially like the general introduction in a way it treats each part as a separate item. That is, in writing about a part, you describe its : <ol style="list-style-type: none"> 1. Function 2. Operating principle <p>Appearance (including shape, dimensions, material, texture, color etc.)</p>
4. Conclusion	Descriptions generally do not require elaborate conclusions. A brief conclusion is only needed, and you can summarize briefly by explaining how the parts function together.

General Description of a Long-Distance Running Shoe

When track and field events became sanctioned sports in the modern world some hundred and fifty years ago, the running shoe was much like any other: a heavy, high-topped leather shoe with a leather or rubber sole. In the last two decades, however, advances in technology have combined with increased competition among manufacturers to create long-distance running shoes that fulfill the two goals of all runners: decreased injuries and increased speed.

Introduction

This paper is a generalized description of a modern, high-tech shoe for long-distance running.

The modern distance running shoe has five major components:

- the outsole
- the heel wedge
- the midsole
- the insole
- the shell

Figure 4.1 is an exploded diagram of the shoe, showing each of the components listed above.

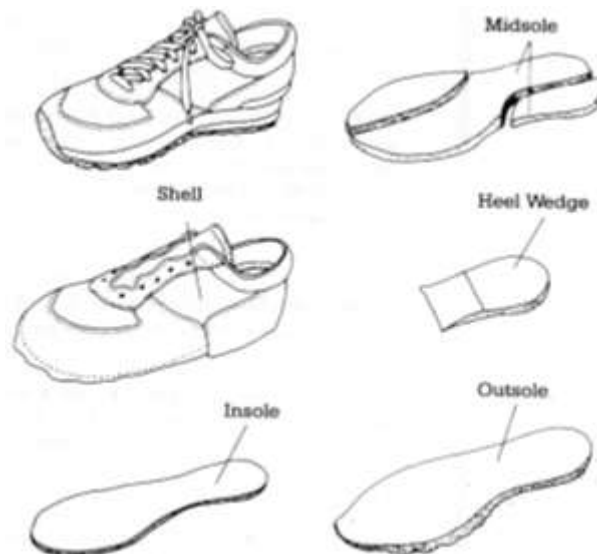


Fig. 4.1: Exploded diagram of a Long-Distance Running Shoe

The Components

In the following sections, the five principal components of the shoe are discussed from bottom to top.

The Outsole

The outsole is made of a lightweight, rubber like synthetic material. Its principal function is to absorb the runner's energy safely as the foot lands on the surface. As the runner's foot approaches the surface, it supinates – rolls outward. As the foot lands, it pronates – rolls inward. Through tread design and increased stiffness on the innerside, the outsole helps reduce inward rolling.

Inward rolling is a major cause of foot, knee, and tendon injuries because of the magnitude of the force generated during running. The force on the foot as it touches the running surface can be upto three times the runner's weight. And the acceleration transmitted to the leg can be 10 times the force of gravity.

The Heel Wedge

The heel wedge is a flexible platform that absorbs shock. Its purpose is to prevent injury to the Achilles tendon. Like the outsole, it is constructed of increasingly stiff materials on the inner side to reduce foot rolling.

The Midsole

The midsole is made of expanded foam. Like the outsole and the heel wedge, it reduces foot rolling. But it also is the most important component in absorbing shock. From the runner's point of view, running efficiency and shock absorption are at odds. The safest shoe would have a midsole of thick padding that would crush uniformly as the foot hits the running surface. A constant rate of deceleration would ensure the best shock absorption.

However, absorbing all the shock would mean absorbing all the energy. As a result, the runner's next stride would require more energy. The most

efficient shoe would have a foam insole that is perfectly elastic. It would return all the energy back to the foot, so that the next stride requires less energy. Currently, distance shoes have midsoles designed to return 40 percent of the runner's energy back to the foot.

The Insole

The insole, on which the runner's foot rests, is another layer of shock absorbing material. Its principal function, however, is to provide an arch support, a relatively new feature in running shoes.

The Shell

The shell is made of leather and synthetic materials such as nylon. It holds the soles on the runner's foot and provides ventilation. The shell accounts for about one-third of the nine ounces a modern shoe weighs.

Conclusion

Today, scientific research on the way people run has led to great improvements in the design and manufacture of different kinds of running shoes. The results are a lightweight, shock-absorbing running shoe that balances the needs of safety and increased speed.

4.3.2 The Structure of Process Description

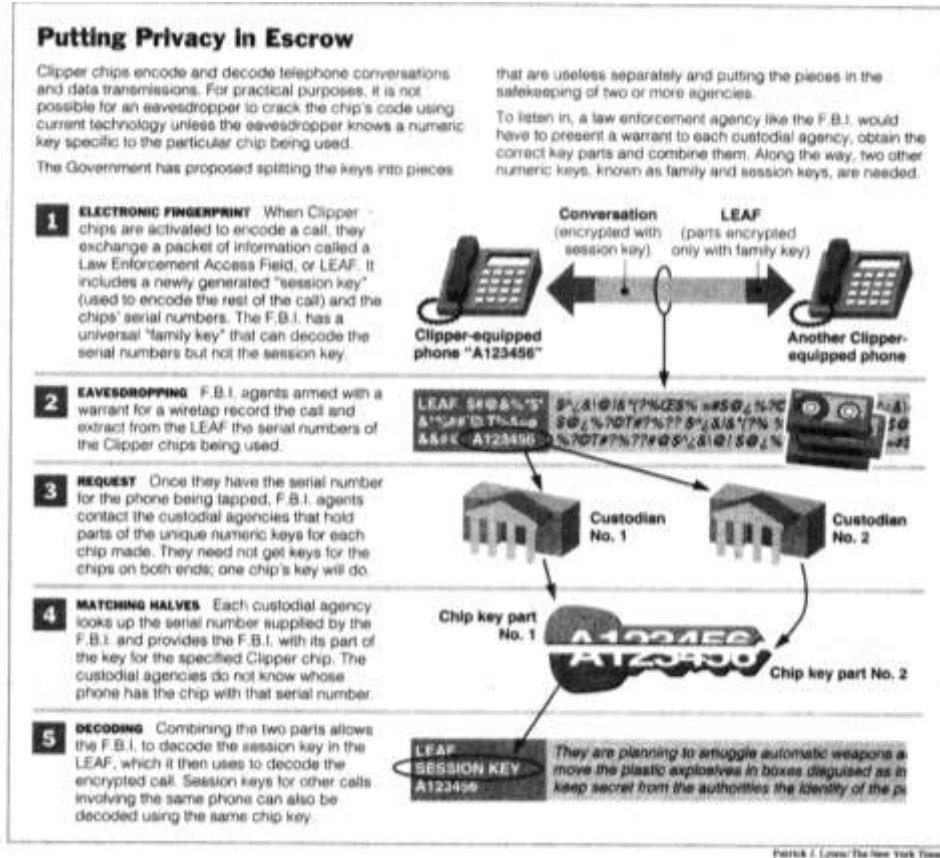
The structure of the process description is essentially similar to that of the object or mechanism description. The only significant difference is that the process is segmented into a reasonable (usually chronological) sequence of steps rather than parts. Most descriptions of items have a four-part structure:

1. Title or section heading
2. General introduction that tells the reader what the process is and what it is used for
3. Step-by-Step description of the process

4. Conclusion that summarizes the description and explains how the steps works together

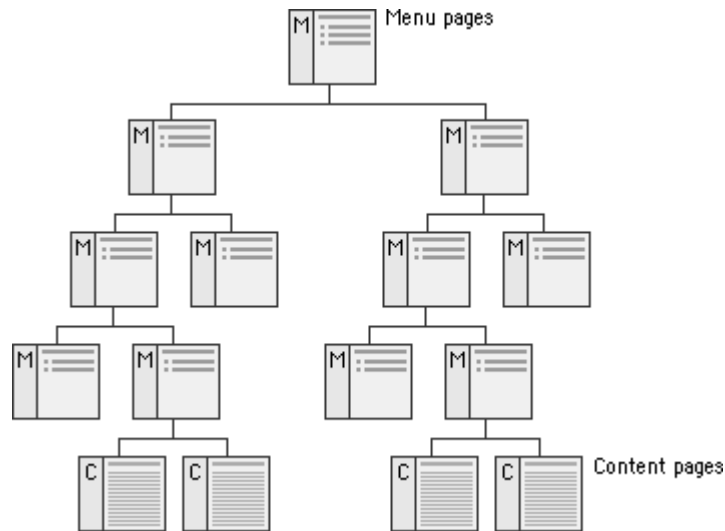
Structural Element	Purpose
1. Title or Section Heading	<p>If the process description is to be a separate document, give it a title. If it is a part of a long document, give it a section heading.</p> <p>In either case, clearly state the subject and indicate whether the description is general or particular.</p>
2. General Introduction	<p>Provides the basic information that your reader will need to understand the detailed description that follows. A general introduction usually answers the following six questions</p> <ol style="list-style-type: none"> 1. What is the process? 2. What is the function of the process? 3. When and where does the process take place? 4. Who or what performs the process? 5. How does the process work 6. What are the principal steps of the process? <p>The information provided in the introduction generally follows this pattern. However, a technical writer uses a different order if the process suggests a different sequence.</p>
3. Step-by-Step Description	<p>It is essentially like the general introduction in a way it treats each step as a separate process. That is, in writing about a process, you describe its :</p> <ol style="list-style-type: none"> 1. What the step is 2. What its function is 3. Occurrence (when, where and how)
4. Conclusion	<p>Descriptions generally do not require elaborate conclusions. A brief conclusion is only needed, and you can summarize briefly by explaining the principal steps involved</p>

Process Description



4.4 Hierarchical Structures

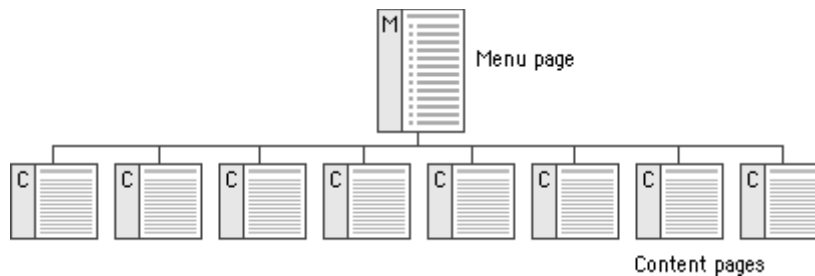
Ideally, you know your audience so well you can rank the importance of your information. At any rate, you should make an intelligent guess at what should come first. This creates a natural hierarchy, where features are listed from most to least important. If you follow the structure of the software or system you are documenting, you may choose to look at the user interface. For each unique screen, simply go from the top left to the bottom right, listing each menu item, command button, or text box in order. Hierarchies become obvious while analyzing the structure and function of your application, based on the primary uses of the system in the hands of your customers.



Hierarchical Structure

Horizontal Structures

More often, because of the nature of modern software and user interface design improvements, you'll find that the application you write about has a horizontal or process oriented layout. This can be represented as a wheel just as well as a flat line.



Horizontal Structure

Horizontal organization emphasizes the dependencies within the process. One thing follows another. At the same time, it shows that you may start the process at a variety of points. Anything can be first. There are many ways to achieve the users' goals.

Vertical Structures

Vertical structures, where there is only one path to follow, are rare. A single information chunk in the form of an instruction may be presented as a vertical structure.

Linear structures

A linear structure is familiar to everyone who reads books. There is a beginning, middle, and an end. For something to happen, something else must happen first. It depends, or has a “dependency” on the first action.

Non-linear structures

Online structures, as you quickly learn by surfing the internet, are non-linear. This means that there is no need for dependency. You can go direct from the middle to the end, and back to the beginning. You can also provide navigation through graphical interfaces, as in this of our SMU DDE website. An image map allows you to identify an area in a graphic, so when the user clicks it a link opens. You can put many links in a single graphic.

4.4.1 Structural clash

Most systems have a mix of dependent and non-dependent functions. Where there are dependencies, a numbered hierarchical structure for the user information is obvious. Where the functions are non-dependent, a non-linear or horizontal structure makes more sense.

But on paper, you cannot effectively represent a non-linear structure. So you must arbitrarily assign importance to various features.

In each case, the key is good navigation designed with your audience in mind, with both structure and function. Allow your readers to search for the information they want with an online search function. Printed documents can have tables of contents and indexes.

4.4.2 What is an information chunk?

An information "chunk" is a digestible unit of information.

Whether you are creating descriptions or instructions, your structure will always be composed of a number of information chunks. A telephone number, for example "0820-340012", has two chunks, one of 4 digits and the other of 6 digits. Chunks can also be known as "nodes" or "elements".

4.4.3 How do chunks work?

George Miller came up with the concept of the "magical number seven, plus or minus two". The idea that human brains can handle and store effectively around seven chunks of information at a time. This means there are clear rules for presenting chunks of information. The rules apply to both printed and online information

Self Assessment Question (SAQ)

2. _____ is digestible unit of Information
a) Chunk b) Data c) Structure d) Hierarchy

4.5 Summary

Technical Communication is filled with descriptions- verbal and visual representation of objects, mechanisms and processes. Through structuring of these details, technical writer highlights important information, and this organization saves readers time and help in the navigation.

4.6 Terminal Questions

1. Explain the hierarchical structures in Information.
2. Explain the structure of Object and Mechanism process.

4.7 Answers

SAQs

1. c) Description
2. a) chunk

TQs

1. Refer Sub Unit 4.4
2. Refer Sub Unit 4.3.1 & 4.3.2

Fine tune Your Grammar**Adjectives**

Any word that adds more meaning to the Noun is called an **Adjective**. It qualifies a noun.

Anshul is a **good** player.

The baby drank **a little** milk.

Kinds of Adjectives**1. Adjectives of quality:** (They answer the question – What kind?)

Pankaj is a fantastic player.

The young man drives too fast.

2. Adjectives of quantity: (They answer the question – How much?)

She drank a little water.

I had no money in my purse.

3. Adjectives of number: (They answer the question – How many?)

The teacher met fifty students.

Nisha is the last in the list.

4. Adjectives of demonstration: (They answer the question Which?)

This story is very interesting.

That building is dilapidated.

I don't like these drawings

Give the papers to those girls.

5. Possessive Adjectives: (They answer the question Whose?)

My son is in school.

It is their car.

6. Interrogative Adjectives:

Which fool did this?

What kind of sweet should I order?

7. Adjective of Distribution:

Each person has to sign on every paper.

Every student has to answer the exam.

Neither Srinivas nor Mohan went to the cinema.

8. Proper Adjectives:

Malaya rubber is noted for its quality

Jute produced in West Bengal (describes Jute)

Japanese style of flower arrangement is called Ikebana.

(the style used by Japanese)

9. Participial Adjectives: This can be either present participle or past participle. Present participle refers to Verb+ing – Write+ing = Writing, Sing+ing = Singing

Past participle refers to verb form liked, writtenen, walkeded, sung etc.

The smiling child is happy.

‘Smiling’ describes child. (The child who is smiling) – Participle

Don’t buy stolen goods.

‘Stolen’ describes ‘goods’ which means goods that are stolen.

Correct Use of Some Adjectives

- | | |
|-----------------------------------|--------------------------------------------|
| a) Little (practically no chance) | Deepak has little chance of being elected. |
| A little (some chance) | There is a little hope of his success. |
| The little (whatever available) | I shall give him the little money I have. |
| b) Few (practically none) | Few people are good. |

A few (a small number)	I have a few friends in my office.
The few (whatever available)	I will pack the few things I have.
c) First (first in order)	Yuri Gagarin was the first man to go into Space.
Foremost (leading, eminent)	Einstein was the foremost scientist of his times.
d) Elder - eldest (of the same family)	She is my eldest sister.
Older - oldest (of age)	He is the oldest man in the village.
e) Nearest (in space)	The nearest bus stop is two kilometers away.
Next (in position)	She sits next to her friend.
f) Later (in time)	This is the later edition of the book.
Latter (in order)	Of the two boys, Raj and Ram, the latter is clever.
Latest (in time)	This is the latest print.
Last (in order)	This is the last bottle.
g) Less (smaller)	I have less money than needed.
Lesser (not as bad as the other)	This is the lesser of the two evils.
h) Farther (distance)	Let us walk a little farther.
Further (additional, beyond what exists now)	He may be given further punishment
i) Many (numerous-referring to number) Many a (singular in form but plural in meaning)	Many of us are on leave tomorrow. Many a man feels frustrated owing to the present education system.
A Great Many (a large number)	A great many people attended the wedding.
j) Outermost (farthest from the center)	The outermost crust of the pizza is tasty.

Uttermost (most distant or remote)	He is a great traveller who has been to the uttermost parts of the earth.
Utmost (extreme, in the highest degree)	This meeting is of utmost importance.
Utter (comparative in form but superlative in meaning- complete, unqualified)	Any one can see the utter absurdity of the situation

Exercise 1: Pick out all Adjectives:

- i) Planning requires careful thought.
- ii) You cannot learn swimming in a shallow river.
- iii) Tagore had a long white beard and broad forehead.
- iv) This interesting story is being filmed at the Gemini studio.
- v) Throw away that broken glass.
- vi) Powerful people can move things easily
- vii) Ten green bottles are hanging on the high wall.
- viii) Which country produces the maximum quality of paddy?
- ix) A rose is red, the violet's blue, honey is sweet and so are you!
- x) Indian players have left the country to play a match.

Adverbs

Adverbs add more meaning to the verb, adjective, or another adverb in a sentence. It 'modifies' that word.

Radha sings melodiously.

He left immediately.

It is terribly hot.

She usually speaks fast.

Formation of Adverbs

1. By adding **-ly**, to an adjective: beautifully, strongly.
2. By adding **-wise, -ways, -wards**: otherwise, sideways, upwards.

3. By combining a **prefix** and a **noun**: asleep, ahead, away, besides.
4. By combining a **prefix** and an **adjective**: alone, around, below.
5. Two adverbs **joined by conjunction**: by and by, over and above, now and then.

Types of Adverbs

Adverbs tell us about the time, place, manner, quantity, reason, and frequency of an action. They are recognized by asking certain questions to the verb. We can use a few questions to find them.

1. **Adverb of time**: It answers the question 'when'.
He left immediately. (When did he leave? – immediately.)
2. **Adverb of place**: It answers the question 'where'.
She lives here. (Where does she live? -here)
3. **Adverb of manner**: It answers the question 'how'.
They lived happily. (How did they live? – happily.)
4. **Adverb of reason**: It answers the question 'why'.
All these happened because of you. (Why did all these happen -because of)
5. **Adverb of frequency**: It answers the question 'how often'.
He rarely spoke. (How often did he speak? - rarely)
6. **Adverb of degree/quantity**: It answers the questions 'how much', 'in what degree'.
There is enough sugar.(How much sugar is there? - enough)
7. **Relative adverb**: E.g.: Show me the place where you were born.

Usage of Adverbs

1. An adverb is often placed as near as possible to the word it modifies.
E.g. He writes carefully.
2. If the verb is in the simple tense form, the adverb is usually placed between the subject and the verb it modifies.
E.g. He often visits his home town.
(Sub.) (Adv.) (V)

3. If the verb is in the form of 'to be' (is, am, was, are, were) the adverb comes after the verb.
E.g. She is a very sober girl.
 4. If the verb is compound, the adverb comes after the auxiliary.
E.g. He will always return home in time.
 5. If the sentence is negative, the adverb of frequency follows 'not'.
E.g. They are not generally selfish.
 6. If the sentence is interrogative the adverb takes position immediately after the subject.
E.g. Has he ever spoken to you?
 7. In case of infinitives (to + simple form of verb + do), adverb should not be placed in between 'to' and 'do'.
E.g. He refused to do the task quickly.
(Inf.) (Adv.)
 8. Use of 'hard', 'hardly' - 'Hard' as an adverb usually follows the verb.
E.g. He works hard to make both ends meet.
'Hardly' as an adverb conveys a negative meaning of scarcely or barely.
E.g. Hardly had he spoken when the bell rang.
 9. Use of 'scarce', 'scarcely' - 'Scarce' as an adverb means hard to find.
E.g. Coal has become scarce in England.
'Scarcely' as an adverb is almost synonymous with 'hardly'.
E.g. I can scarcely hear you.
* 'hardly' and 'scarcely' are followed by **when**. 'No sooner' is followed by **than**.
Hardly / Scarcely had the bell rung **when** the children ran out of the classroom.
No sooner had the bell rung **than** the children ran out of the classroom.
- OR**
- No sooner** did the bell ring **than** the children ran out of the classroom.

Exercise 2: Identify the adverbs in the sentences given below:

1. The deer runs very gracefully.
2. When are you going to Switzerland?
3. The party is going to take place here.
4. All students and teachers work closely on the project
5. Erin has never seen snow.
6. This picture is precisely what I am looking for.
7. Unfortunately, the sky quickly grew dark.
8. Have you travelled recently?

Answers**Exercise 1**

- i) careful thought
- ii) shallow
- iii) long, white, broad
- iv) interesting
- v) broken
- vi) Powerful
- vii) Ten, green, high
- viii) Maximum, quality
- ix) red, blue, sweet
- x) Indian

Exercise 2

- i) gracefully
- ii) When
- iii) here
- iv) closely
- v) never
- vi) precisely
- vii) quickly
- viii) recently

Unit 5

Technical Writing Style

Structure

- 5.1 Introduction
 - Objectives
- 5.2 Concise Communication
- 5.3 Clarity and Precision
- 5.4 American and British English
- 5.5 Style Manual
- 5.6 Summary
- 5.7 Terminal Questions
- 5.8 Answers

5.1 Introduction

In the previous unit, you have learnt how to structure the technical documents. While structuring, it is very important to pay attention to the writing style. A well written technical document is one which is easily understood even by the lay man. Whenever you buy any new gadget, be it a camera, juicer, tape recorder, or for that matter, even a pack of medicine from a pharmacy, you first read the literature that is kept along with the product. Now, if it contains all jargons and is written in a complicated language, it would be difficult for you to understand and use the product. Hence, it is essential for you to develop a simple and lucid style of writing if you want to become a technical writer.

Objectives

After studying this unit, you will be able to:

- write technical documents in a concise style.
- construct unambiguous and clear sentences.
- avoid commonly made mistakes while writing

- recognise British and American English
- use consistent style in technical documents

5.2 Concise Communication

While writing a technical document it is essential that it be concise and direct. The longer the document, the more difficult it is to use, for the obvious reason that it takes more of the reader's time. But you should write it in such a way that it gives justice to conciseness, clarity and comprehensiveness. We will now discuss the key points that would direct you towards concise writing.

i) Direct Writing:

Avoid old fashioned, stuffy phrases and long winded sentences associated with classic formal writing. In the present times, people are very busy and will be easily irritated to read unnecessarily lengthy documents. So you should focus directly on the matter to be told. Express your idea in straightforward, conversational style. Practice using the shorter words to make your writing better.

Complex: Before filling the gas tank, it is necessary to turn off the propane line to the refrigerator. Failure to do so significantly increases the risk of explosion

Simplified: Before you fill gasoline into the gas tank, turn off the propane line to the refrigerator. If you do not turn off the propane tank, it could explode.

Given below is the list of long phrases, those you can avoid. The equivalent, appropriate word is given.

Along the lines of	Like
At this point in time	Now
Because of the fact that	Because
By means of	By
Due to the fact that	Because
For the purpose of	For
In order to	To
In spite of the fact that	Although
For the reason that	For
In the event that	If
In the final analysis	Finally
Until such time as	Until
A majority of	Most
A number of	Some, many
At an early date	Soon
At the conclusion of	After, following
At the present time	Now
Based on the fact that	Because
Despite the fact that	Although
During the course of	During
During the time that	During, while
Have the capability to	Can
In connection with	About, concerning
In regard to	Regarding, about
In the view of the fact that	Because
It is often the case that	Often
It is our opinion that	We think that
It is our recommendation that	We recommend that
It is our understanding that	We understand that
Make reference to	Refer to
Of the opinion that	Think that
On a daily basis	Daily
On the grounds that	Because
Prior to	Before
Relative to	Regarding, about
So as to	To
Subsequent to	After
Take into consideration	Consider

ii) Sentence Construction:

Careful crafting of sentences is perhaps the most vital aspect that you need to practice and master in order to be an effective technical writer. We will discuss the important points that would make your writing 'reader friendly.'

- a) Word order: It is always common that any book on improving writing skills would emphasize on the usage of correct words at the right place. However, it is equally important that you place the words in the right order. The easiest rule that you need to follow is to place the word or phrase as close as possible to other word or phrase related to it in meaning or grammar.

Wrong: Now that you have read the manual of target practice, try shooting yourself.

Right: Practice shooting, now that you have read the manual of target practice.

Wrong: Write down the procedure of electroplating on a postcard.

Right: Write down on a post card the procedure of electroplating.

- b) Ambiguity: The word may be placed in such a position that it can give meaning to a varying range of elements within the sentence.

Doubtful: He was hardly happy and eager to get rid of me.

(This sentence could mean that he was not happy or eager to get rid of me. It could also mean that he was not happy to see me and hence was eager to get rid of me.)

Right: He was hardly happy, and eager to get rid of me.

- c) Brevity: The words may be omitted to make the sentence short. At the same time you assume that you have tried to cram too much meaning in the short sentence. This results in ambiguity.

Wrong: He likes me more than you.

(This sentence could mean that he likes me more than he likes you. Or, it could also mean he likes me more than you like me)

Right: He likes me more than you do. / He likes me more than he likes you.

d) Use lists: Lists are useful tools to shorten the length of your sentences in technical writing. By converting the sentences into lists, information can be given in small chunks. They are easier to understand and remember. Lists can be made using bullets or numbers.

- i) list with bullets – The list can be bulleted when;
 - You don't need to follow any specific order
 - You want to highlight special features
 - You want to list options
- ii) list with numbers – The list can be numbered when;
 - You have to follow a strict order
 - You have to list alternatives
 - You have to make recommendations

While making the list to avoid lengthy sentence, you should also be careful about the length of the list. Avoid including more than ten items in your list. If your list exceeds ten items, subdivide the list. Given below is an example of a list, which gives directions to open a Marker File in TUKACAD programme. Since the list was long, it is divided into two subdivisions:

- A. To Open a Marker File From the Current Directory:
 - 1. Go to the FILE Menu.
 - 2. Select OPEN MARKER FILE.(**Ctrl+O*)
 - 3. The Open Marker Dialog Box will be displayed.
 - 4. In FILE NAME – Select the desired DSP file.
 - 5. The selected file will display in FILE NAME.
 - 6. Select OPEN.(Double-click on the file)
 - 7. The selected file is now opened.

B. To Open a Marker File From Another Directory:

1. Go to the FILE Menu.
2. Select OPEN MARKER FILE. (*Ctrl+O)
3. The Open Marker Dialog Box will be displayed
4. In LOOK IN – Double click the first option. (Usually C:\)
5. A list of your directories will be displayed
6. Select the desired directory.
7. A list of DSP files will be displayed in the FILE NAME.
8. Select the desired file.
9. Select OPEN. (*Double-click on the file)
10. The selected file is now opened.

- e) Focus on action words: Let the focal point of your action be in the action words or verbs. Don't express it in other words (nouns – important words that ends in suffixes like –sion, -tion, -ment, -ing, -ion, -ance)

Wrong: You should reach the conclusion that on clicking 'delete' button, the text you typed gets erased.

Right: You should conclude that on clicking 'delete' button, the text you typed gets erased.

Wrong: This procedure is a protection against reinfection.

(The main action is 'protecting', but the main verb is 'is'.)

Right: This procedure protects against reinfection.

- f) Emphasise the most important: Placing the main information in the sentence, in the right place will help you to control the length of the sentence. How do you do this?

- Place key information at the end of the sentence:

Wrong: The performance of the camera will be superb in all function modes.

Right: In all function modes, the performance of the camera will be superb.

- Place key information in the main clause. Consider the emphasis in the following two sentences:

"Although *significant variations are found in details of any specific locale studies*, a composite image of upper crustal structure at a variety of scales can be developed."

"Although *a composite image of upper crustal structure at a variety of scales can be developed*, significant variations are found in details of any specific locale studied."

- Explicitly tell what information is key:

While writing technical document, to emphasise the most important information, you could place the key information at the end of the sentence, place it in the main clause and - most important – explicitly tell what the key information is.

- g) Express parallel elements in parallel structure: The coordinating elements in a sentence should be stated in the same grammatical form. Crafting and sustaining a recognizable pattern makes the sentence easier to understand.

Wrong: Section 1 will introduce the entire system, while section 2 describe the step by step instructions.

Right: Section 1 will introduce the entire system, while section 2 will describe the step by step instructions.

Wrong: The typist should follow the printed directions; do not change the originator's work.

Right: The typist should follow the printed directions; and not change the originator's work.

In the first sentence, the first clause is in subjunctive (a grammatical mood that expresses doubts, wishes, and possibilities) and the second is in imperative (a grammatical mood that expresses a command or request).

Wrong: We need to buy more lumber, hardware, tools and, hire the subcontractors

Right: We need to buy more lumber, hardware, and tools, and we need to hire the subcontractors.

In the first sentence, two ideas are joined inappropriately. It is corrected by adding the verb, 'need,' which shows two different ideas.

5.2.1 Common Errors while Constructing Sentences

- **Shift in Tense and Person:** This is a common problem faced by many writers. It refers to beginning a sentence or a paragraph in one tense and ending it in another.

- i) Each participant will bring their inputs to the presentation.
- ii) He did not have to apologised for being late at the meeting.

The correct form should be,

- i) Each participant will bring his / her inputs to the presentation.
- ii) He did not have to apologise for being late at the meeting.

This problem of shift in tense and person is easily solved if you make small sentences where you can concentrate on the subject and the tense of the verb.

- **Subject verb agreement:** This is one of the most common mistakes committed while writing in English. This problem arises when you put a plural verb for a single subject or vice versa. **Subject and verb must agree both in number and person.** If the subject is singular then so is the verb. Plural subjects take plural verbs.

Unfortunately, there are subjects that confuse us because they don't fit into the simple rule of subject – verb agreement. Let's learn them.

- i) When two subjects are joined by 'and', the verb is plural.

Wages and benefits are often the cause of employee dissatisfaction
But when you have '*either . . . or*', '*neither . . . nor*', '*not . . . but*'

In these cases, **the verb agrees with the subject nearest to the verb.**

Neither the team leader nor the members accept responsibilities.

(plural subject – plural verb)

Neither the team members nor the leader accepts responsibilities.

(singular subject – singular verb)

- ii) When two subjects are joined by ‘as well as’, ‘with’, ‘together with’, ‘accompanied by’, the verb agrees with the subject mentioned first.

The President of India, as well as his secretaries, is invited to the function. (singular subject – singular verb)

- iii) When words ending in –one, -body, or –thing (anyone, anything, anybody, everyone, everything, everybody, no one, nothing, nobody, someone, something, somebody) are used as subject they are always singular

- iv) The words *each (of) either(of) , neither(of)* always take singular verbs
Each of the application forms has to be counter signed by the manager.
Neither of the candidates was chosen for the post.
Either of the forms is attached along with the report.

- v) Most collective nouns (exception ‘police’ ‘people’) take singular verb.
The expression of time, distance, and money are often seen as collective items and hence take a singular verb.

The committee doesn't have to come up with a solution until next week.

Five thousand rupees is a fair price for such an old painting.

- **Incorrect use of apostrophe:** Apostrophe is used either to indicate possession (The manager's car) or contraction (The telephones weren't working).

While using apostrophe for contractions, you should note that it is used only in informal situations. The main contractions that cause confusion are:

- **it's / its:** It's is the contracted colloquial way to write 'it is' or 'it has'. So, you should never use it in formal writing. The word 'its' is the possessive form.

Other rules that you have to keep in mind while using apostrophe are:

- If the noun is singular or plural without 's' as the ending letter, the apostrophe comes before the 's'.

Today the marketing team's enthusiasm was down.

- If the noun ends with the letter 's', then only the apostrophe is used after the letter 's'.

The managers' meeting did not go well.

- Personal nouns which are possessive, ending in 's' do not take apostrophe.

Those books are ours

- The plurals of abbreviations / dates do not take apostrophes.

ICICIs, the 1990s

- Incorrect use or omission of articles- Using articles when they are not required and omitting them where they are required is another problem which needs to be taken care of.

Articles are not used

1. with non countable nouns referring to something in general

E.g.: Coffee is his favourite drink.

2. before names of languages and nationalities.

E.g.: English, Indian

3. before names of academic subjects.

E.g.: History, Biology

4. before names of cities, towns, states.

E.g.: Miami, Seoul

5. before names of streets

E.g.: M.G. Road

6. before names of lakes
E.g.: Lake Titicaca
Exception: 'the' is used with group of lakes. E.g.: the Great Lakes.
7. before names of mountains
E.g.: Mount Everest
Exception: 'the' is used with mountain ranges. E.g.: the Andes, the Rockies
8. before names of continents
E.g.: Asia, Australia
9. before names of islands
E.g.: Easter Islands
Exception: 'the' is used with the chain of islands. E.g.: the Andamans
10. before material nouns
E.g. Gold is a precious metal

Self Assessment Questions

- i) Place the word or phrase as _____ as possible to the words related to it.
- ii) Lists can be made using _____ or _____.
- iii) You should place the key information at the _____ of the sentence.
- iv) Most _____ nouns take singular verb.

5.3 Clarity and Precision

Whenever you write a technical document, be clear about what you want to say and say it clearly. Use short, simple words and language to relate whatever you want to tell. Use concrete words – two words in English will have similar meaning – in such cases, use the word which is commonly understood. E.g.: if you use the word 'house' and it conveys the meaning that you intend, don't use the word 'residence' which will make the message more complicated. Avoid long winded sentences (running into five lines and

more). Spare your reader the tedious task of understanding the document and try to make smaller sentences. To make the document clear, break it into different paragraphs when you have to discuss more than one main point. Finally, you have to understand that writing a good technical document involves a lot of practice which will gradually enable you to be an effective writer.

The paragraph that is written should be coherent; the thoughts should be linked together logically. Parallel ideas should be presented in parallel grammatical construction, the cause and effect method also can be used.

The emphasize on the coherence can be constructed in three ways:

- i) Adding transitional words and phrases: They point out the direction that the thoughts are taking. They prepare the readers what to expect next. The transitional phrases and words are used in between the paragraphs to show the connection, in the same way as they are used in between the paragraphs as linkers. The link that you provide to show coherence should be near the start of the sentence / paragraph. Given below is an example that shows the weak version and an improved version (by using transitional word).

Weak: A holographic image seems to change as the viewer moves in relation to it. The distances between objects on the image seem to change.

Improved: A holographic image seems to change as the viewer moves in relation to it. In addition, the distances between objects on the image seem to change.

The following are some of the transitional words and phrases that help you in bringing coherence to your writing.

- a) Shows time or lists items in order - In the first place, To begin with, First of all, After that, Then, Next, First, Second, Third, Finally,

- b) Adds an idea – Furthermore, In addition, Also, Moreover, another...
 - c) Indicates similarity – Likewise, Similarly, In the same way,
 - d) Provides an example – For instance, In particular, ...such as... For example,
 - e) Shows a result – Consequently, Hence, As a result, Therefore,
 - f) Refers to an alternative – On the other hand, Then again, Alternatively,
 - g) Says an idea more simply – To put it simply, In other words,
 - h) Compares, contrasts or contradicts – In comparison, by contrast, while..., whereas Instead, Conversely, On the contrary, Despite... , however,
 - i) Indicates other ways of considering something - although... though... even though... in spite of ...however, Still, After all, even if... Nevertheless,
 - j) Generalizes or summarizes – In brief, To sum up, In short, In general, Overall, It is clear...
- ii) **Repeating key words:** This is another technique to help the easy flow of reading. The key words, especially the nouns, are repeated. In order to make the matter interesting, some writers use different terms for the important terms or concepts. However, this would cause confusion in the readers. Technical communication must be concise and clear; so the repetition of key words is the best method to make the task of your readers easy. Nonetheless, too much repetition can be boring. To avoid this, you can vary nonessential terms, as long as you don't sacrifice clarity.

Weak: For months the project leaders carefully planned their research. The cost of the work was estimated to be over \$200,000(The confusion in this statement is created by using the word 'work'. Does the 'work' denote 'planning' or 'research'?)

Improved: For months the project leaders carefully planned their research. The cost of the research was estimated to be over \$200,000.

- iii) Using demonstrative pronouns followed by nouns: The demonstrative pronouns such as, this, that, these and those, could be used as linkers to help maintain the coherence. However, what you should keep in mind is that the pronouns should act as adjectives and not pronouns. Hence, a noun should follow the demonstrative pronoun.

Weak: New screening techniques are being developed to combat viral infections. These are the subject of a new research effort in California. (The confusion created by this sentence is the subject studied in California, is it new screening techniques or viral infections?)

Improved: New screening techniques are being developed to combat viral infections. These techniques are the subject of a new research effort in California.

5.3.1 Guidelines to clear and specific writing:

Your writing should be clear and specific, in other words, it should not be too formal or too informal in order to put in the brackets of technical writing. Follow the guidelines given below to make your writing comprehensible.

- i) Use active voice
- ii) Use present tense
- iii) Use direct speech
- iv) Use specific words
- v) Avoid unnecessary jargons
- vi) Use positive constructions
- vii) Avoid long noun strings
- viii) Avoid pompous words

i) Use active voice:

While writing any technical document, it is always said to use sentences that are short. Using active voice helps to keep your sentences short. Active voice indicates that the subject is active in a situation. We know who does the action, to whom in a sentence. The reading as well as understanding of what you read, is easy and interesting when it is written in active voice. So, try to use active voice in a technical document.

Lets now learn what is active voice and passive voice. We will also learn to convert active to passive and vice versa.

A large number of actions involve two people or things – one that performs the action, and one that is affected by the action. These actions are typically referred to using transitive verbs.

The editor is editing the book.

In the above sentence, the editor is subject and he/she is the performer. The book is the object, and it is affected by the action - 'is editing' is the transitive verb.

When the subject of the sentence is doing something (here 'is editing') or active, we take the verb is active too. So we say is editing is the active verb and the sentence is in the active voice.

The lady sold computer peripherals.

The lady is subject, the lady is the performer. She is active (sold computer peripherals). So, sold is the active verb. The sentence is in the active voice. In short, when the subject is active, as the performer of an action, the verb is in the active voice.

I told him.

Technical writers should avoid unnecessary jargons.

In each sentence above, the verbs (ones underlined) are in the active form, or in active voice.

However, sometimes we may want to focus on the person or thing affected by an action (object) of an active form of the verb. In that case, we make the affected person or thing subject and make the verb passive.

He edited the technical document for correctness. (active voice)

The technical document was edited for correctness (by him). (passive voice)

In the passive form, by him is inactive, it only receives the action. So the verb is said to be in the passive voice. (passive means not active)

Passive voice is ambiguous; hence avoid its usage in technical writing. You can identify the passive voice easily. Look for the sentences using the word 'by'. They are almost always passive. Verbs in past-participle form (was edited, is driven) are usually passive.

Changing passive into active: Tense wise:

It is very important to note that while converting the passive voice to active voice, or vice versa, the **meaning** and **tense** of the sentence **should not change**.

The engineers are repairing the system (Active)

The system is being repaired by the engineers (Passive)

When auxiliaries form a part of a verb:

1. Text book editors must please their customers.(Active)

The customers must be pleased by the text book editors. (Passive)

When the sentence is imperative (order or request)

Complete this work.

Let this work be completed. (by you)

When the performer is a human being or human beings, mentioning 'by whom' is not necessary for it sounds odd. It is understood and so they are placed in brackets.

ii) Use Present Tense

In Computer world, everything happens 'now'. There is no reference of past or future. The events happen in the present time. If any action takes place in another time, the computer has another reaction to it. Therefore, the

verbs used while writing technical documents should be exclusively in the present tense.

The user clicks on icon 'file' (action in present tense)

The computer opens the file (reaction in present tense)

iii) Use Direct Speech

When you are writing technical English, remember to use instructive voice and not suggestive. Your style of writing should be direct. So, the tone will be commanding. This requires you to use imperative sentences with unambiguous terminologies.

Wrong: The user may chose to run the washing machine and it will automatically start rotating when he/she hits the 'on' button.

Right: Press the 'on' button. Your machine will rotate.

The second sentence gives the same essential information that the reader of the manual needs to know. It is devoid of unnecessary information; one need not worry about he/she distinction. This is the shortest way of conveying information.

This usage will help you when you have to give a series of instructions. Put the instructions in distinct steps, starting with the action verb. Also, to avoid ambiguity use 2nd person singular possessive pronoun (your)

Click Page Layout

Click 'Orientation'

Select 'Landscape'. Your document will change from portrait to landscape.

iv) Use specific words

Using specific words involves using precise words, providing adequate details. This helps in avoiding ambiguity.

Ambiguous: Mercedes Benz is a vehicle.

Right: Mercedes Benz is an automobile.

In the first sentence, Mercedes Benz could mean any vehicle (not specific) – pickup, truck, tractor, train, hot air balloon, or any other means of transport. The second sentence uses specific term, ‘automobile.’

Ambiguous: The tyre of cycle experienced difficulties.

Right: The front tyre of the cycle was punctured while Joe was riding on the rugged road, with stones jutting out.

In the first sentence, you have to ask questions like which tyre? what difficulties? Why the difficulties? which makes the sentence ambiguous.

v) Avoid unnecessary jargons

Jargon means the words used by a specific group of people, who may come from the same community, educational background, job etc. The commonly used ATM for a lay man is automated teller machine, but for an electrical engineer it means asynchronous transfer mode. When you mention the word ‘bear’ to a zoologist he would refer to it as a type of animal, but a commerce graduate would talk about share market. It is not wrong to use jargons because two people of the same culture or field of study would prefer to talk using the terms of their craft. However, when you write technical document that has the possibility of being read by people of different fields, then you need to be cautious in your usage of jargons.

Wrong: Boot your system

Right: Start your computer

A computer novice wouldn’t understand what you are talking about in the first sentence.

vi) Use positive constructions

Readers understand the positive constructions better and faster than the negative constructions. So, you should construct sentence which says ‘what is’ rather than ‘what is not’

Wrong: Because the team did not have sufficient time to complete the project, it was not unsurprising that it was unable to prepare a satisfactory report.

Right: Because the team had too little time to complete the project, it produced an unsatisfactory report.

vii) Avoid long noun strings

Noun strings (phrase consisting of a series of nouns, adjectives and adverbs that modify the last noun) are used to save time. Using noun strings is advisable only if your readers understand. To avoid using long noun strings, you could use hyphens.

Wrong: Raj uses a self locking washer.

Right: Raj uses a washer that is self locking

Right: Raj uses a self-locking washer.

The words 'self' and 'locking' are modifiers of the word 'washer'. In the first sentence, the reader would be confused to know if it is self washer or locking washer. This dilemma is cleared by changing the usage as given in second and third sentences.

ix) Avoid pompous words

In technical writing, you should stick to plain talk. If you want your reader to know what you are talking about, use simple and direct English.

Wrong: The purchase of a database program will enhance our record maintenance capabilities.

Right: Buying a database program will help us maintain our records.

Pompous words	Simple words
Advise	Tell
Ascertain	Learn, find out
Attempt (verb)	Try
Commence	Start, begin
Demonstrate	Show

Employ(verb)	Use
Endeavour(verb)	Try
Eventuate (verb)	Happen
Evidence (verb)	Show
Finalize	End, settle, agree, finish
Furnish	Provide, give
Impact	Affect
Initiate	Begin
Manifest	Show
Parameters	Variables, conditions
Perform	Do
Prioritize	Rank
Procure	Get, buy
quantify	Measure
Terminate	End, stop
utilize	Use

Self Assessment Questions

v) Match the following

Transitional Phrase	Meaning
a. Likewise	i) Generalises or summarises
b. On the other hand	ii) Indicates similarity
c. Despite	iii) Provides examples
d. In brief	iv) Refers to alternative
e. Such as	v) Contradicts the idea

5.4 American and British English

American English is the form of English written and used in America. It includes the dialects used within the United States of American. British English is the form of English written and used in United Kingdom. It includes the dialects used within the United Kingdom.

The difference between the English used in Britain and United States, is mainly found in the pronunciation and vocabulary, which includes spelling.

American English has been a fertile source of new words and usages. American coinings, many reflecting the changing patterns of life in the 20th century, are now part of World English (baby sitter, commuter, gimmick, hospitalize, know-how, teenager)

Others include buzz words and expressions such as blueprint for success and lifestyle, slang and informal usages.

Americans also evolved their own forms of spelling. Promoted by the great lexicographer Noah Webster, these spellings were simpler, more logical and etymologically better than which was practiced by British English.

- i) Word ending in ‘-our’ became ‘-or’: color, armor, neighbor
- ii) British ‘-re’ became ‘-er’: meter, liter, center
- iii) British ‘double l’ became single: traveling
- iv) Some British ‘single l’ became double: skilful became skillful, rationalizing the idea that ‘skillful’ is derived from the word ‘skill’.
- v) British ‘-s’ became ‘-z’: rationalize, terrorize
- vi) Other words were spelt the way they were pronounced: cheque became check, programme became program, tyre became tire, pyjamas became pajamas, bonnets and boots became hoods and trunks, lifts became elevators

We should also be careful while writing the date. The difference in short-form date order can lead to misunderstanding. For example, 02/03/08 could mean either March 2, 2005 (if read as British format), 3 February 2008 (if seen as in American format).

British English	American English
Trousers	Pants
Jumper/ Pullover / Sweater/ Jersey	Sweater
Vest	Undershirt
Waistcoat	Vest
Wellington Boots/Wellies	Galoshes
Mac (slang for Macintosh)	Rain coat
Trainers	Sneakers
Braces	Suspenders
Polo neck	Turtle neck
Friend / mate	Friend
Rubber	eraser
Maths	Math
Public school	Private school
State school	Public school
Holiday	Vacation
Staff room	Teachers lounge
Mucking around / off task	Off task / fooling around / goofing off
Play time / break time	recess
Open day	Open house
Marking scheme	Grading scheme
Drawing pins	Push pins or thumbtacks
Sleeping policeman / speed bump	Speed bump
Car park	Parking lot
Car journey /drive	Road trip
Zebra crossing / pedestrian walk	Cross walk
Motorway	Freeway
Traffic jam / tail back	Traffic jam
Lorry	Truck
Petrol	Gas / gasoline
Pavement	Sidewalk

Petrol station	Gas station
Diversion	Detour
Fire engine	Fire truck
Phone box	Telephone booth
Semi-detached house	Duplex
Flat (one storey), apartment	Apartment
Terrace (row of houses joined)	Town house
chemist	Drug store / druggist
bungalow	House (one storey) ranch house
Biscuit / bickie (a cookie is a large biscuit)	Cookie
Scone	Biscuit
Sweets	Candy
Sausage / banger	Sausage
crisps	Chips
Chips (French fries)	French fries
Starter	Appetizer
Puddings / afters / dessert / sweets	Dessert
Jam	Jelly or jam
Jelly (a dessert in UK)	Jell – o (flavored gelatin)
Aubergine	Eggplant
Bill (at restaurant)	Check
Grill (oven grill)	Broil (oven broil)
Food/grub/nosh	Food
Rasher	A slice of bacon
Eggy bread (fried)	French toast
Runner beans	Green beans
Take-away	Take out
bonnet	Hood
Windscreen	Windshield

Boot	Trunk
Reversing lights	Back-up lights
Exhaust pipe	Tail pipe / muffler
Tap	Faucet
The toilet / loo / the john / bog / WC	Bathroom / restroom
Garden	Back yard / yard
Ward robe	Closet
Bin /dust bin	Trash can
Television / box / telly / TV	TV / Television
Cooker	Range or stove
Couch / sofa / settee	Sofa
Hand basin / sink	Sink
Cashier	Teller
Post man	Mail man

A final note, technical writing, being a formal writing style, you have to adopt any one style, either British or American. The rule of the thumb here is to be consistent. Decide which dialect, British or American, you are going to use in your writing and stick to it.

5.5 Style Manual

Technical writing, like other types of writing, has over the years developed a style of its own. This has been accepted globally in order to keep up with the consistency and precision in word usage, which is of paramount importance in communication. It is usually a cause for concern when your readers find instability in the usage of certain spellings, or fonts. Readers are quick to find when you confuse 'alter' and 'altar', or write 'born' instead of 'borne.' So, a style guide or style manual is adopted by the company to maintain consistency in the writing. Here, we will focus on some of the general matters that require being uniform throughout the document or between two documents of the company.

Numbers:

While writing any numbers in the document, you should generally spell them out one through nine. For numbers more than ten, use numerals instead of words.

There are 22 computers in our office out of which five are Mac.

Abbreviations:

The technique used to save space, especially in heading, is the usage of abbreviations. This also improves the readability. While using abbreviations with all capitals, do not insert periods in between (ISRO, NDA); however, you need to insert period for all capital abbreviations of places (U.N., L.A.)

Acronyms – These are words formed from the initials or other parts of several words, e.g., AIDS(Acquired Immuno Deficiency Syndrome). You can use the acronyms after you have referred to them earlier. In the first usage the full form also should be given, to avoid confusion in later stages.

Dates and time – You can abbreviate Jan., Feb., Aug., Sept., Oct., Nov. and Dec. only when they are used with specific dates (Dec. 23, 1992). However, you need to spell out March, April, May, June and July. While you have to mention time periods, insert period (A.D., B.C., a.m., p.m.).

Capitalisation:

By now you should be familiar of capitalising the first letter of the first word of a sentence. Along with that, you should capitalise the following:

Academic degrees – Capitalise only the abbreviation form of the academic degrees but not the full formal name. (M.C.A. – master of computer application)

Politics – Capitalise political organisations or movements (the Congress Party). Use lower case when you have to refer to political philosophies (communism, democracy)

Religion – Capitalise all recognised faiths and their members (Hindus, Catholics, Jews)

Title – Capitalise official titles before names, unless they are only the job descriptions (Pope John Paul IV, but ‘the pope’)

Time:

- When you refer to any specific time, you should follow certain rules that make your document easier to understand because it will be consistent throughout. A specific time should precede the day. The day should precede the place.

The classes will begin at 9.30 a.m. Saturday at the Head Quarters.

- Use ‘noon’ and ‘midnight’, not 12 a.m. and 12 p.m.
- Avoid redundancies. 10 a.m. tomorrow, not 10 a.m. tomorrow morning.
- When you omit figures in the year, insert an apostrophe to suggest the omission. (batch of '92)

In addition to the style guidelines discussed above, you could refer to the AP style (Associated Press), which is given in the appendix.

Self Assessment Questions

- vi) Indicate the incorrect choices in the following:
 - i) She retired to her (birth, berth) on the train.
 - ii) This version of the computer program will (supercede, supersede) the one issued two years ago.
 - iii) She ordered new (stationary, stationery) for the company.
 - iv) Although the pay was good, the work was (seasonable, seasonal) and he wanted to work throughout the year.
 - v) The (principal, principle) shareholder spoke at the annual meeting.

5.6 Summary

Success in any work place is achieved with the help of effective communication. Such communication relies on being concise and clear. In this unit, you have learnt to create technical information by assessing the needs of your readers. You have been introduced to the mechanics of good technical writing along with the techniques that help you write effectively. The style manual discusses various rules that you should follow while writing, which in turn helps in maintaining the consistency in your writing.

5.7 Terminal Questions

Convert the sentences as indicated in the brackets

1. The learning modules were put together by a couple of professors in the department (convert this informal sentence to moderately formal).
2. When choosing multiple programs to record, be sure that the proper tape speed has been chosen. (passive voice is used inappropriately, rewrite it).
3. The perpetrator was apprehended and placed under arrest directly adjacent to the scene of the incident.(Remove unnecessary jargons to enable a general reader understand the text)
4. Williams was accused by management of making predictions that were not accurate.(Convert negative sentence to positive constructions)
5. Information provided by this program is displayed at the close of the business day on the information board. (Revise the sentence to place properly the misplaced modifiers)

5.8 Answers

Self Assessment Questions

- i. Close ii. bullets or numbers iii. End iv. collective
v. Match the following:

Transitional Phrase	Meaning
a. Likewise	i) Indicates similarity
b. On the other hand	ii) Refers to alternative
c. Despite	iii) Contradicts the idea
d. In brief	iv) Generalises or summarises
e. Such as	v) Provides examples

- vi. i) berth ii) supersede iii) stationery iv) seasonal v) principal

Terminal Questions

1. The learning modules were compiled by some professors in the department.
2. Ensure proper tape speed when choosing multiple programs to record.
3. The person responsible for the incident was held in custody near the scene of the incident.
4. Williams was accused by management of making predictions that were inaccurate.
5. Information provided by this program is displayed on the information board at the close of the business day.

Fine tune Your Grammar**Conjunctions**

A Conjunction is a word, which connects words, phrases, clauses or sentences. There are two classes of conjunctions. They are:

**i. Co-ordinate conjunctions****ii. Subordinate conjunctions**

Co-ordinate Conjunctions join two ideas or sentences, which are of importance. They also join two words of equal grammatical rank. The chief co-ordinate conjunctions are – and, but, for, nor, or, otherwise, so, else, either _____ or, neither _____ nor, yet, only, both _____ and, however.

At 10, she went to bed, and fell asleep.

Javed likes vegetarian and non-vegetarian food.

I would love to attend the function but I'm not free that day.

Yesterday was sunny but cold.

He ate up hurriedly whatever we gave for he was hungry.

He was angry for he had missed the bus.

Neither owls nor bats come out during the day.

I don't speak English at home, nor does my mother.

Turn down the heat or the cake will burn.

You can go to Tokyo either by land or by sea.

I can't play cricket or hockey.

Don't drive so fast, otherwise you will crash.

Tie the goat to the tree, otherwise it will eat up all our plants.

English examination was easy; however, biology was difficult.

Jamie fell down the stairs; however, he didn't really hurt himself.

It rained and so the match was cancelled.

The matter is confidential, so don't tell anyone about it.

He may work slowly yet his work has perfection.

She worked hard yet failed to pass.

I would like to be there, only I would be out of station.

The creature over there is neither a squirrel nor a rat.

He is neither in England nor in Australia.

Either phone me or write a letter.

She plays both the piano and the violin.

Exercise 1: Use correct coordinating conjunctions in the blanks:

- i) You sang well ____ you need a little more practice.
- ii) She opened the door ____ walked in.
- iii) The river was not deep enough, ____ they returned home.
- iv) He ____ remembers your name ____ your face.
- v) Father doesn't want to send me to Australia, ____ I am continuing my studies here.
- vi) John lives in a small house ____ he has kept it clean.
- vii) Make new friends ____ keep the old.
- viii) Sing me a lullaby ____ tell me a story.
- ix) Listen to the teacher ____ you won't understand the lesson.
- x) Lata left for office early, ____ she reached there late.

Subordinate Conjunctions: are the conjunctions that connect the incomplete idea to the main idea.

The patient had died before the doctor arrived.

Before the doctor arrived – incomplete idea.

The patient had died - main idea.

Before – subordinating conjunction.

Kinds of Subordinating Conjunctions

There are many subordinating conjunctions. They are used to express different incomplete statements, or function as a part of them. They tell us about:

1. time
 2. manner
 3. place
 4. condition
 5. reason
 6. concession
 7. result
 8. purpose
 9. comparison
1. Subordinate conjunctions express a **period of time**: when, while, as since, after, before, until, as soon as, no sooner, whenever, till, hardly ...when.
- a) When the baby cried, mother ran towards him.
 - b) While father was reading a paper, mother brought him a cup a tea.
 - c) As Prince left for office, he remembered to carry his office key.
 - d) Since the beginning of this year, Jacob has been getting severe pain.
 - e) After the teacher had marked all the answer papers, he entered the marks.
 - f) Before you answer the questions, read them with care.
 - g) You must not get off the bus until it stops.
 - h) As soon as the dog heard a noise, it barked.
 - i) No sooner did the show start than the audience stayed quiet.
 - j) Whenever tell a lie, my parents understand from my body language and smile.

- k) I can't lend you anymore money until / till you repay what you
l) borrowed last month.
- m) The workers had hardly left when the building collapsed.
- n) Scarcely had he left home when he discovered that he had left his passport behind.
2. **Manner expression** is linked with the subordinating conjunctions as, as if / as though
- a) Look here! Do as I do
- b) Sometimes Pinky talks as though / if she knew everything. (actually she doesn't know anything)
- c) When I explained my plan, some of my colleagues looked at me as though I was mad.
3. **Place expression** is linked with conjunctions – where, wherever.
- a) Do not park your car where there is no enough room to take a U-turn.
- b) You can sleep wherever you like.
4. **Conditional expression** is made with - whether, if, unless
- a) Mother asked me whether I wanted rice or bread for the night.
- b) If we win the match, we shall be greatly honoured.
- c) Many of us do not go to a film unless it has a good story and music.
- d) If I went to the shop, I would get you a kilogram of sugar. (I may not go)
- e) If I had seen him on the road, I would have greeted him. (I didn't see him and so I didn't greet him.)
5. **Reason** is expressed using conjunctions like - because, since, as.
- a) Children did not go out to play because it was raining heavily.
- b) Since Joe failed to get a reservation, he cancelled his trip to Darjeeling.

- c) She could not take any photographs, as there was no film in the camera.
6. **Concessive** (used to contrast what follows) expression is linked with conjunctions – though, although, even though
- a) **Though** it was a difficult climbing, they managed to reach the top of the mount in the end.
- b) **Although** your ideas are well organized, you need to improve your pronunciation.
- c) **Even though** I have been learning painting for over ten years, I have not been able to achieve perfection.
7. Idea expressing **result** is associated with conjunctions – so --- that.
- a) The athlete ran so fast that he reached the winning line in 30 seconds.
8. Idea of **purpose** is expressed with conjunctions - so that, in order that
- a) People work hard so that they can earn money for a dignified living.
- b) We eat in order that we may live.
9. **Comparison** is linked with – than, as---as
- a) Your essay is better than mine. (is)
- b) I think the Pacific ocean is as deep as the Atlantic Ocean. (is)

Interjections

A word, which expresses a sudden and intense feeling of surprise, joy, fear, sadness is interjection. The exclamation mark put after it indicates the feelings. (Ah! Hurrah! Well! Dear! Oh!) Interjection is not grammatically connected with the rest of the sentence.

Hurrah! We have won the match.

Answers

Exercise 1

- i) but
- ii) and
- iii) so
- iv) neithernor
- v) Therefore
- vi) but.
- vii) and
- viii) or
- ix) or
- x) but

Unit 6 Technical Communication Editing

Structure

- 6.1 Introduction
 - Objectives
- 6.2 Meaning
- 6.3 Types of Editing
- 6.4 Role of a Technical Editor
- 6.5 Proof Reading
- 6.6 Summary
- 6.7 Terminal Questions
- 6.8 Answers

6.1 Introduction

In the previous unit, we have discussed the technical writing style; the language that should be used, appropriate words, grammar, were shown as keys to effective technical writing. Once you write the material, it may contain mistakes, or it may be understood differently by others; not as you would want your readers to understand. Hence, editing the technical document is as important as writing the document. In this unit, we would learn the meaning and techniques of technical editing.

Objectives

After studying this unit, you will be able to:

- explain the role of a technical editor
- understand and appreciate the tasks performed by an editor
- use proof reading symbols and abbreviations while editing.

6.2 Meaning

To edit a document means to modify or improve the already written material. Editing involves revising the written text to make it more effective, to enable the reader understand it better.

'Technical editing' means editing technical matter. In other words, it refers to editing a broad range of materials, from descriptions of experiments in chemistry to instructions for using a hand camera, or fixing the tyre of a vehicle. Some documents may be very technical, such as reports with formulas and equations; while some other documents may be simpler, like the annual report of a company. However, technical documents all have in common, an aim to communicate clearly the technical information. Mostly such documents either inform or persuade the readers, but much technical writing is also intended to entertain, such as articles in National Geography.

Technical document often differ in style and format from other non fiction prose. Technical style favours simplicity and conciseness in sentence structure, specificity in usage of words, streamlined and clear organization of content and heavy reliance on graphics. Also, technical documents often follow a specific format, which has to be followed throughout.

6.3 Types of Editing

This requires examining large aspects of a document, such as the organization and content, as well as smaller parts such as individual sentences and graphics. Both these issues can be addressed at the same time as you gain experience. Editing also involves changing the text according to the subject, audience and purpose. As a novice, you could start editing the material to suit the subject audience and the purpose of writing the technical document. Then you should examine the organization and

content. Finally, look for the phrasing, grammar, and punctuation. This kind of editing is broadly classified as Macro editing and Micro editing.

Macro editing: You need to check the content of the material, how it has been organized and its logic to ensure that it addresses its subject and audience, thereby serving the purpose for which it is written. Main issues such as clear matter or purpose statements, fluid, or easy-to-follow organization of the content, a thorough summary and introduction and accurate as well as complete content are favoured in macro editing. You should be familiar with the type of document, its subject matter, the company producing the document in order to edit the document effectively at a macro level.

Micro editing: It is also called copy editing or line editing. This involves necessary revisions to individual sentences or graphics. It is the close editing of the text. In other words, here the editing is done word by word and line by line to come out with a well written document that is sound in expression, correct in grammar, consistent with company standards. The editor checks the complexity level to make sure that the text in the document is presented at an appropriate level to match the complexity level of the readers. The editor also has to check for the correctness; he has to fine tune the document to ensure its consistency with standards and correctness in sentence structure, grammar, spelling and punctuation.

Self Assessment Questions

1. Line editing is also called as macro editing (True / False)
2. Technical document often differ in _____ and _____ from other non fiction prose
3. Micro editing is also called as copy editing (True/False)

6.4 Role of a Technical Editor

A technical document, to be effective, requires not only a good writer, but also a good editor. The chief duties of a technical editor are realized when the sections of a technical document are submitted to him. The main duties that he performs include:

Improving text material: The editor determines how appropriate the content and organization are for the purpose and audience. He is instrumental in making the verbose material into concise and clear. In doing this he should be cautious because he needs to retain the tone and words used by the writer.

Examining the graphics for appropriateness and balance: He also helps in the task of selecting, naming and numbering of graphics as well as placing them in suitable context.

Identifying sections that need fuller development: Check each section for logic and completeness of evidence to support claims.

Correcting errors, if any, of spelling, grammar, and style.

Editing Tasks:

When the editor receives the technical document as a preliminary draft, he has to first review the document for the appropriateness of content. He also checks if the draft is organized in a logical manner. The document need not be accurately polished at this stage because at the time of each editing, the material undergoes a radical revision. The technical editor makes sure that the sections framed in the material match the number of sections that were planned in the document outline. He has to also ensure that the illustrations or graphics printed are placed in the proper sections of the text.

The editor needs to read each section for the content. If he finds it necessary he may also add sentences to clarify the organization of each section in order to recheck if the sections are placed in a proper order.

Once the order is verified, the content has to be examined in order to be certain that the main points developed match the level of particular audience for whom it is written. In case the main idea is not clear or the points that are developed do not coincide with the main idea that the writer needs to convey, the editor should discuss with the writer to clarify the purpose of writing the document.

At the content examining stage, the editor also needs to verify the graphics for variety and clarity. He should also check if the illustrations and graphics support the main points of the document. If the graphics are found to be confusing or unnecessarily complex, the writer is consulted for revision.

Another important task that the editor has to perform is arrangement of the reprint permission. When the writer wants to include copyrighted materials, the editor has to organize for getting permission from the copyright authority of source material. In some cases when the copyright issues don't exist, the editor should ensure due acknowledgement of the borrowed material.

The editing task does not end here. Before the final printing of the document, the printing masters (the original copy of finalized document - a stencil, from which other copies can be made) have to be checked for mistakes in the final corrections. Ensuring the captions and graphics match properly also takes place at this stage. The masters are checked for quality; to guarantee that they are free of smudges, loose pieces of text or graphics. The numbering of each page, to see that there is no repetition or wrong numbering has to be confirmed at this last stage before the document goes for final print.

6.5 Proof Reading

The importance of proof reading is often underrated. Careful proof reading can ensure that a printed document is correct and attractive and that the document creates a good impression of the company that produced it.

Proof reader's work is not to edit, but to correct the errors that are found in the document. At the time of proofreading, appropriate technical dictionaries and company style guide are proofreader's reference materials to suggest changes in the document. He/She should understand the intention of the writer of the document; what the writer wants to tell, and mark neatly the necessary changes that need to be done to correct the error.

Proof readers should concentrate on three main regions:

- i) Content – To effectively proof read a technical document, you should check the technical details against a reliable reference. You should also pay attention to the inconsistencies in data and look out for mistakes in labeling units of measures, Greek letters, formulas and mathematical symbols.
- ii) Spelling – Misspellings are the most obvious errors to readers of published documents, so proofreaders should check carefully for accuracy of spelling. It is not wise to rely on spelling checkers in word-processing programs, which will only flag words not in their own dictionary. Most spelling checkers do not recognize correct words used improperly, like 'here' and 'hear', 'form' and 'from', so proof readers should check each word for context as well as spelling.
- iii) Others – Grammar errors should be checked. There should be consistency in the language used, whether it is American English or British English. Special care should be taken while checking the usage of Proper nouns. Any misspellings in names of products or people could lead to a lot of embarrassment. The accuracy of titles, headings and illustration captions should be checked very carefully. Errors in

these parts of a document are often overlooked by writers and editors, but because they stand out, such mistakes are often noticed quickly by readers.

When proof reading a document, proof readers should verify the typed text against the original manuscript to make sure it is complete and correct. In the case of a review draft, only the writers' sketches of the graphics are available, so there is usually no proofreading of graphics at this stage. Proof reading a first-review draft involves one-to-one reading, comparing the typed version with the original manuscript letter by letter and number by number. One-to-one proof reading takes far more time than most people realize.

Self Assessment Questions

4. When are the chief duties of a technical editor realized?
5. The technical editor need not read all sections for the content compatibility.(True / False)
6. You can rely on spell checkers in the word-processing programmes while proofreading for the accuracy of spellings. (True / False)
7. Before the final printing of the document, _____have to be checked for mistakes in the final corrections.

6.5.1 Proof reading symbols:


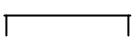
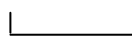


Editing and proof reading symbols are universal regardless of subject matter. Editing symbols are used on hard copy to indicate to a typist, type setter or graphic artist the changes the editor wants made when the text of a document is typed for the first time in a soft copy, when the soft copy version of text is revised, and when graphics are created or revised.

Proof reading symbols are used at different points in creating a document. It is important to remember that 'proofreading' is done at many points in creating a technical document, not only at the galley (a long metal tray used

for holding type that is ready for printing) or page proof stages. When the text has been put on disk(soft copy), the disk version is proofed against the original manuscript and when graphics are created they are proofed against the original sketches. When the text and graphics have been corrected following final review, and the document is about to 'go to the press', the printing masters are proofread.

The symbols that you use to indicate corrections or changes in the text are called 'Proof reading symbols.' If you change the symbols time and again, it leads to inconsistency and may confuse the typist or writer when he/she intends to do the changes suggested by you as an editor. The purpose of proofreading is to find the typographical errors. The proof reading symbols are usually placed in the margins of the text, with a line drawn to indicate the exact place of the error. You can choose the margin depending on the place of error. If the error is closer towards the right margin, indicate the proof reading symbol in the right margin. The symbol is placed in the left margin, if the error is towards it.

Symbol	Instruction	Example
L	Paragraph this	<u>convert this into a paragraph</u>
	Run on /no new paragraph	There is no continuation. This is the end of the paragraph
	Join the words / close up extra space	Week end
^	insert	Insert a ^{single} word
	delete	Delete s this letter
replace	replace	insert Replace the word
	transpose	Words first come
#	Insert space	You should in insert space here

	New paragraph	He runs.¶ She jogs
Don't change	Ignore marked change	Let it <u>stand</u>
	Align	What is your name? Where have you come from?
23	Spell out	23 rd is the date to watch out for!
	Move up	Move up this sentence
	Move down	Move down this sentence
	Move left	Move this sentence to the left
	Move right	Move this word to right to align
ital	Make italic	Make this word <i>italic</i> (ital)
bf	Make bold	Make this word bold (bf)
caps	Make capital	<u>Capitalise</u> this word (caps)
lc	Lower case	Put in LOWER case (lc)
supe	Super script	12 ⁰ (supe)
sub	Sub script	H/2 ₀ (sub)

6.5.2 Abbreviations:

Sometimes the editors use the abbreviation to suggest corrections. The abbreviation would appear in the margin, probably with a line or arrow pointing to the offending element. The common proofreading abbreviations are:

Abbreviation Meaning

- Ab** a faulty abbreviation
- Awk** awkward expression or construction
- Cap** faulty capitalization

DICT	faulty diction
- ed	problem with final <i>-ed</i>
 	problem in parallel form
Pron	problem with pronoun
Rep	unnecessary repetition
Sp	spelling error
- s	problem with final <i>-s</i>
STET	Let it stand (the proof reader uses this Latin term to indicate that proofreading marks calling for a change should be ignored and the text as originally written should be "let stand.")
S/V	subject/verb agreement
Wdy	wordy
WW	wrong word

Self Assessment Questions

8. What is galley?
9. Proofreading symbols are placed in the ____ of the page.
10. What do you mean by the abbreviation STET?

6.6 Summary

Learning the art of writing technical document is a work half done; learning the nuances of editing and proofreading it completes this work. In this unit we have discussed the importance of editing a technical document. We have also covered the basic duties of a technical editor. The proof reading symbols are indicated that will help you practice proofreading, which is one of the most important task an editor has to perform.

6.7 Terminal Questions

1. Differentiate between Micro and Macro editing.
2. Explain the role of a technical editor.

6.8 Answers**Self Assessment Questions**

1. False
2. Style and format
3. True
4. The chief duties of a technical editor are realized when the sections of a technical document are submitted to him.
5. False
6. False
7. Printing masters
8. Galley is a long metal tray used for holding type that is ready for printing.
9. Margin
10. If the proofreader has suggested a change and then he wants it to be ignored, he uses the abbreviation STET, which means let it stand.

Terminal Questions

1. Refer Section 6.3
2. Refer Section 6.4

Fine tune Your Grammar**Sentence**

A group of words that makes a complete sense or gives complete meaning is called a sentence. It expresses the thought of the person who speaks or writes the sentence. Traditionally, a sentence is considered as a largest grammatical unit. A sentence also consists of the choice of right words, proper arrangement of those words according to the prescribed grammatical rules. It is also imperative that a sentence has a verb in it to consider it as a sentence.

**Kinds of Sentences**

From the point of view of expression of thoughts, the sentences are divided into four kinds.

1. **Declarative Sentences:** Look at the sentences below.



Veena is playing word zap

Mark works on computers.

Tsunami hit the southeast coast of India.

They state or assert certain facts. So they are called declarative sentences. A declarative sentence makes a statement. It begins with a capital letter and ends with a period.

2. **Interrogative Sentences:** Look at the following examples: -

What is your name?

Where are you going?

Whom did Ajith meet last night?

Notice the question marks in the end of the sentence.



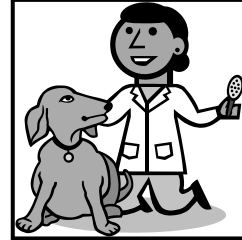
This suggests that the sentences are asking questions. Such types of sentences that ask questions are called Interrogative sentences.

3. **Exclamatory Sentences:** Now, look at the sentences that follow-

Wow, what a win that was!

What alert animals the dogs are!

How tragic his life is!



The sentences in the example express strong feelings either of happiness or sadness. The feelings are also sudden. Also notice the exclamatory mark at the end of the sentences. Such sentences are called Exclamatory sentences.

4. **Imperative sentences:** Finally, read the sentences given below.

Go out of the class

Call the electrician, please

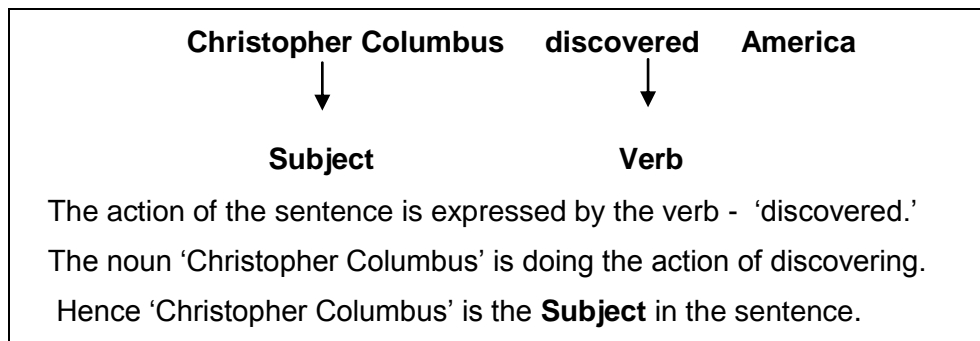
May the Lord bless.

The first sentence is an order, the second, a request and the third is a wish. We use the above sentences when we are talking directly to someone. Hence the subject (you) is omitted

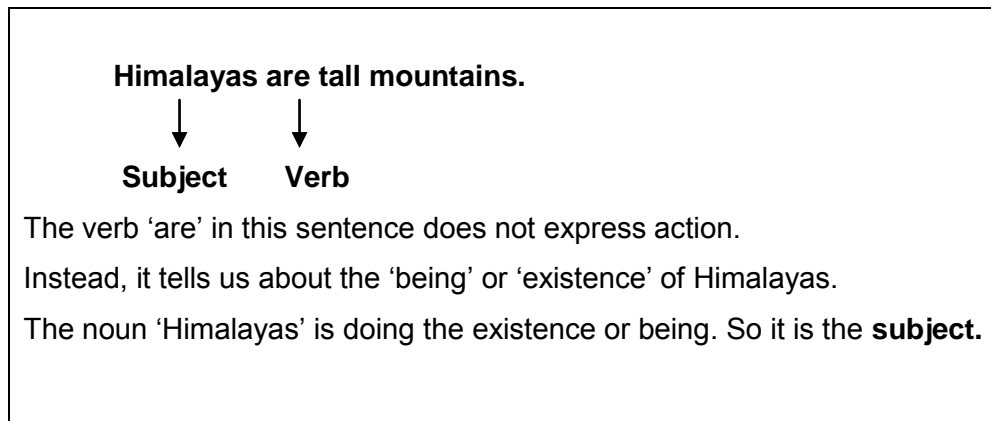


because it is understood in the meaning. Such types of sentences that are used to express order, request or wish are called as Imperative sentences.

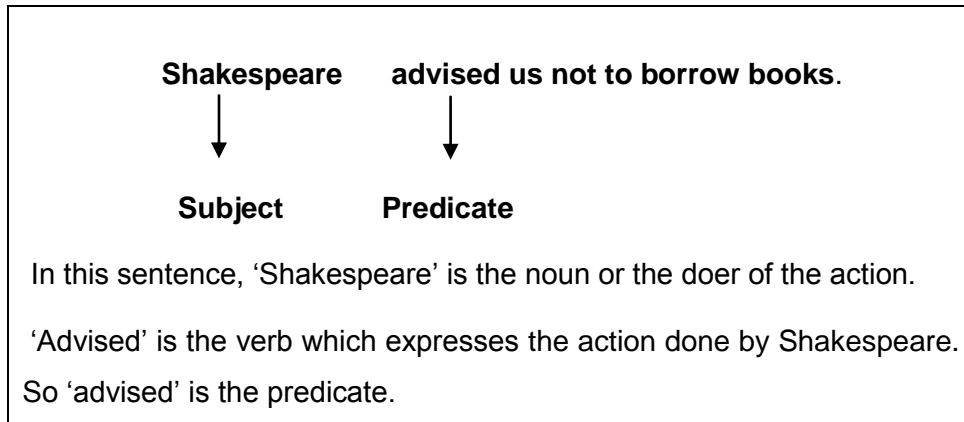
Subject: The complete subject is the **simple subject** (a noun or a pronoun) plus **any words or group of words modifying the simple subject** that tell who or what the sentence is about. Thus, a subject is the person, place, or thing that acts, is acted on, or is described in the sentence.



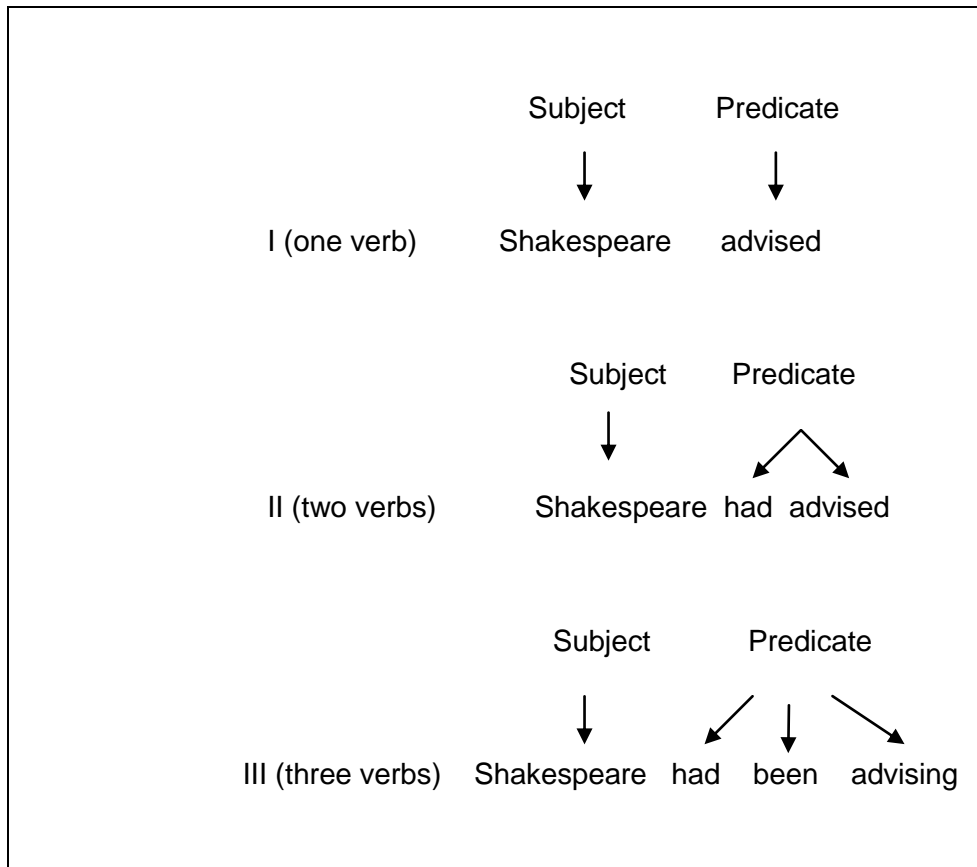
Sometimes the verb will express 'being' or 'existence' instead of action.



Predicate: The predicate is the action or description that occurs in the sentence. Sometimes a verb will express existence instead of an action. Verb is an essential part of the predicate. In other words, we can say that the predicate is the 'telling part' of the sentence because it tells us what the subject is doing and to whom.



Sometimes the 'predicate' consists of two or more verbs.



One or two 'auxiliary' or 'helping' verbs precede the main verb.

Note: An 'ing' ending verb should always have a helping verb with it to make it a predicate. 'ing' ending verb without a helping verb cannot be a predicate in a sentence.

Unit 7 Systems Development Life Cycle

Structure

- 7.1 Introduction
 - Objectives
- 7.2 Systems Development Life Cycle (SDLC) – Overview
- 7.3 SDLC Phases
 - Feasibility
 - Requirement Analysis and Design
 - Implementation
 - Testing
 - Maintenance
- 7.4 Strength and Weakness of SDLC
- 7.5 Summary
- 7.6 Terminal Question
- 7.7 Answers

7.1 Introduction

Systems Development Life Cycle (SDLC) relates to models or methodologies that people use to develop systems, generally computer systems. To manage this, a number of system development life cycle models have been created: waterfall, fountain, spiral, build and fix, rapid prototype, incremental, and synchronize and stabilize. In the academic sense, SDLC can be used to refer to various models. Anyhow, technical documentation is crucial regardless of the type of model chosen or devised for any application, and is usually done in parallel with the development process.

Objectives

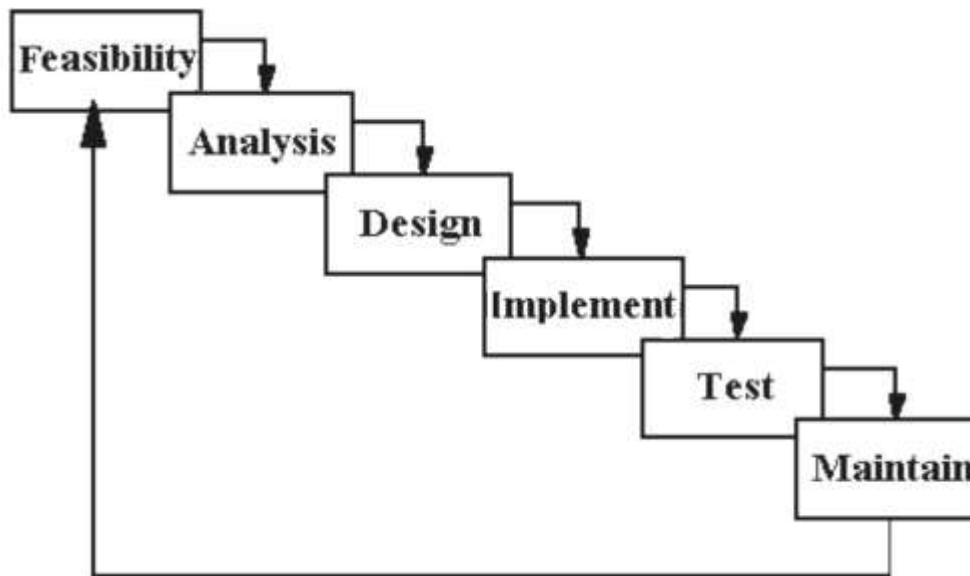
After going through the unit, you will be able to:

- identify the Phases in System Development Life Cycle
- compare strengths and weaknesses of SDLC

7.2 System Development Life Cycle – Overview

The Systems Development Life Cycle (SDLC) is a conceptual model used in project management that describes the stages involved in an information system development project from an initial feasibility study through maintenance of the completed application. Various SDLC methodologies have been developed to guide the processes involved including the waterfall model (the original SDLC method), rapid application development (RAD), joint application development (JAD), the fountain model and the spiral model. Mostly, several models are combined into some sort of hybrid methodology. Documentation is crucial regardless of the type of model chosen or devised for any application, and is usually done in parallel with the development process. Some methods work better for specific types of projects, but in the final analysis, the most important factor for the success of a project may be how closely a particular plan was followed.

The image below is the classic Waterfall model methodology, which is the first SDLC method and it describes the various phases involved in development.



7.3 SDLC Phases

7.3.1 Feasibility

The feasibility study is used to determine if the project should get the go-ahead. If the project is to proceed, the feasibility study will produce a project plan and budget estimates for the future stages of development.

7.3.2 Requirement Analysis and Design

Analysis gathers the requirements for the system. This stage includes a detailed study of the business needs of the organization. Options for changing the business process may be considered. Design focuses on high level design like, what programs are needed and how are they going to interact, low-level design (how the individual programs are going to work), interface design (what are the interfaces going to look like) and data design (what data will be required). During these phases, the software's overall structure is defined. Analysis and Design are very crucial in the whole development cycle. Any glitch in the design phase could be very expensive to solve in the later stage of the software development. Much care is taken

during this phase. The logical system of the product is developed in this phase.

7.3.3 Implementation

In this phase, the designs are translated into code. Computer programs are written using a conventional programming language or an application generator. Programming tools like Compilers, Interpreters, Debuggers are used to generate the code. Different high level programming languages like C, C++, Pascal, Java are used for coding. With respect to the type of application, the right programming language is chosen.

7.3.4 Testing

In this phase the system is tested. Normally programs are written as a series of individual modules, these subject to separate and detailed test. The system is then tested as a whole. The separate modules are brought together and tested as a complete system. The system is tested to ensure that interfaces between modules work (integration testing), the system works on the intended platform and with the expected volume of data (volume testing) and that the system does what the user requires (acceptance/beta testing).

7.3.5 Maintenance

Inevitably the system will need maintenance. Software will definitely undergo change once it is delivered to the customer. There are many reasons for the change. Change could happen because of some unexpected input values into the system. In addition, the changes in the system could directly affect the software operations. The software should be developed to accommodate changes that could happen during the post implementation period.

Self Assessment Question (SAQ)

1. Which of the following is the third step in SDLC Phase
 - a) Requirement Analysis & Design
 - b) Testing
 - c) Implementation
 - d) Monitoring

7.4 Strength and weakness of SDLC

Strengths	Weaknesses
Control.	Increased development time.
Monitor Large projects.	Increased development cost.
Detailed steps.	Systems must be defined up front.
Evaluate costs and completion targets.	Rigidity.
Documentation.	Hard to estimate costs, project overruns.
Well defined user input.	User input is sometimes limited.
Ease of maintenance.	
Development and design standards	
Tolerates changes in MIS staffing.	

Self Assessment Question (SAQ)

2. _____ is a weakness of SDLC
 - a) Complex steps
 - b) User input is limited
 - c) Control
 - d) None of the above

7.5 Summary

The Systems Development Life Cycle (SDLC) is a conceptual model used in project management that describes various stages, starting from feasibility of the project to maintenance of the project. For the success of a project,

Technical communicator should closely observe every step involved and plan the documents for effective communication.

7.6 Terminal Question (TQ)

1. Explain the various phases involved in System Development Life Cycle (SDLC).

7.7 Answers

SAQs

1. c) Implementation
2. b) User input is limited

TQs

1. Refer Sub Unit 7.3

Fine tune Your Grammar



Clauses

Words and phrases can be put together to make a clause. A group of related words that contain both a subject and a predicate and that functions as a part of a sentence is a clause. A clause is different from a phrase because a phrase is a group of related words which lacks either a subject or a predicate or both. Look at the following sentence.



My grandfather snores when he sleeps

My grandfather snores (Clause I)

when he sleeps (Clause II)

In the above example there are two clauses. Only one of them is a sentence. i.e. which makes a complete sense.

Clause I: My grandfather snores. This gives a thought or an idea that is complete. It can stand by itself. In other words, it is **independent** of other words. So it is a **Principal clause**.

Clause II: When he sleeps. This gives an incomplete thought or idea, one that **cannot** stand by itself, one that needs some more words to make it whole. The word 'when' changes the meaning, making the thought incomplete. After reading this clause, we are left hanging.

The clause raises a question —————> **what will happen when he sleeps...?**

So the second clause which depends on the first to give meaning to it is called a **Dependent Clause**.

Hence there are two main kinds of clause. They are-

Main Clause: It is also called as Principal clause. It is an independent clause.

Subordinate (or dependent) Clause: A subordinate clause is not a complete sentence. It functions as a single part of speech – as a noun, an adjective, or an adverb.

E.g.: I must admit that Maruti 800 is my first personal car.

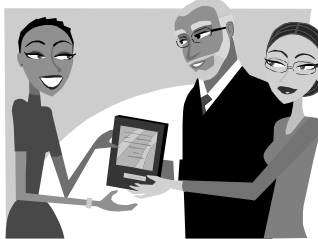
Main Clause Sub. Clause

Subject - Verb Agreement

The subject and verb agreement is an important aspect of the English language. It is very important that the verb and subject agree in number and person.

The two smart girls in the class were chosen to win the award.

In the given example there are three ways in which the subject (girls) is shown to be plural:



1. the adjective 'two'.
2. the plural marker 's' attached to the subject 'girl'.
3. the verb 'to be' in its plural form 'were'.

* While trying to determine whether a verb

should be in singular or plural form, find the subject and ignore all the words coming after it. If the subject is singular, then the verb is singular or vice versa.

The problems with the student have not yet been resolved.

In this example, the subject is 'problems' which is in the plural form. So the verb should be in the plural form. Hence we use the verb 'have' (plural form).

1. When two subjects are joined by 'and', the verb is plural.

E.g.: John and Jinny are friends.

Exceptions:

- When two singular nouns are joined by 'and', but refer to the same person, then the verb is singular.

E.g.: 1. The secretary and treasurer is on leave. (article 'the' is used only once.)

2. The secretary and the treasurer are on leave. (article 'the' is used twice).

- When two different singular nouns express one unit, the verb is in singular.

E.g.: Rice and curry is my staple diet.

- When two singular subjects are practically synonymous, the verb is in singular.

E.g.: Peace and Prosperity is the need of the day.

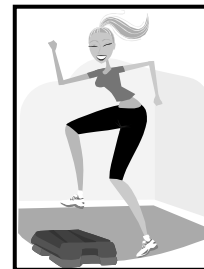
- When two singular subjects are joined by 'and' which are preceded by 'each' or 'every', the verb is in singular.

E.g.: Every man, woman and child has been rescued.

2. **The nouns that end in -s (certain countries, fields of study, activities, diseases) take a singular verb.**

The aerobics class is held every Tuesday.

↓ ↓
singular



E.g.: The United States doesn't have a centralized governing body for educational affairs.

Mathematics was my favorite subject in school.

6. **“None” and “neither” always take a singular verb, whether followed by a plural or a non-count noun.**

E.g.: None of the cats belongs to me,

Neither of the women is the one who spoke to me yesterday.

7. **When the subjects are joined by “either ...or”, “neither ... nor”, “not only ... but also” “both ... and”, the verb agrees with the subject which is close to it.**

E.g.: Neither the children nor the mother wants to leave.

Either you or I am going to call an end to this charade.

Not only she but all her friends also were in the list of failures.

Both my brother and I am interested in joining the team.

8. **When two subjects are joined by ‘as well as’, ‘with’, ‘together with’, ‘accompanied by’, the verb agrees with the subject mentioned first.**

E.g.: The President of India as well as his secretaries is invited to the function.

Her friends along with Sheela are arriving by the first flight.

9. **In sports, while referring to the players, the name of the country is followed by plural verb.**

E.g.: England have won the world cup.

10. **When the percentage or a part of something is mentioned with plural meaning, the verb used is plural.**

E.g.: 30% of the Indian women are literate.

11. **“Majority” can be singular or plural.**

- If it is followed by a plural noun, plural verb is used.

E.g.: Majority of the pens were blue.

- If it stands alone, singular verb is used.

E.g.: The majority believes in easy work.

Unit 8 Technical Communication Ethics

Structure

- 8.1 Introduction
 - Objectives
- 8.2 What is Legal & Ethical?
- 8.3 Ethical Issues in Technical Communication
- 8.4 STC Code for Communicators
- 8.5 Summary
- 8.6 Terminal Questions
- 8.7 Answers

8.1 Introduction

The role of the modern technical writer and communicator is expanding rapidly and will continue to do so; the ethical scope of the technical writer's responsibility is comparably expanded too. The technical writer is now seen as an information developer in the formative stages of creating technical information, as a communicator in disseminating information, as an interpreter in explaining information, and as a usability expert in guiding the application of information. As a result, ethics becomes involved technical writing in many ways, traditional and modern, obvious and non-obvious.

Objectives

After going through the unit, you will be able to:

- explain the role of ethics in Technical communication
- judge the good and bad in Technical communication

8.2 What is Legal & Ethical?

Law is a system of rules, enforced through a set of institutions used as an

instrument to underpin civil obedience, politics, economics and society. Law consists of a wide variety of separate disciplines. Contract law regulates binding agreements which may relate to everything from civil purchase to trading on derivatives markets. Property law defines rights and obligations related to the transfer and title of personal and real property. Trust law applies to assets held for investment and financial security, while Tort law allows claims for compensation of an individual or his property is injured or harmed. If the harm is criminalized in penal code, criminal law offers the means by which the state can prosecute the perpetrator. Constitutional law provides a framework for the creation of law, the protection of human rights and the election of political representatives. Administrative law regulates the activities the administrative agencies of government, while International law governs affairs between sovereign nation states in activities ranging from trade, environmental regulation or military action.

Legal systems elaborate rights and responsibilities in a variety of ways. A basic distinction is generally made between civil law jurisdictions and systems using common law. In some countries, religion informs the law. Scholars investigate the nature of law through many perspectives, including legal history and philosophy, or social sciences such as economics and sociology.

Ethics is a major branch of philosophy, encompassing right conduct and good life. Ethics is the study of what is right and good, usually involving deciding a course of action in a dilemma offering several possibilities. Ethics here is understood broadly as encompassing both conventional theories of ethics and values and value systems.

Legal and ethical are not synonymous: Slavery was legal in parts of the USA until the Civil War. Australian law seriously restricted women's rights until fairly recently. Wife-beating is still legal in some parts of the world.

Emerging technologies mean that the law often is well behind the times; but we must make choices now, not wait for the law to catch up.

We read particularly about issues in genetics and medicine, but there are plenty in scientific and technical communication as well. Computer technology and the Internet have given us the ability to access, distribute, and copy information more quickly and easily than before. Censorship is difficult; so is policing intellectual property rights.

'But it's not illegal' is no excuse for failure to accept personal responsibility for your ethical choices.

Self Assessment Question (SAQ)

1. _____ is a major branch of philosophy encompassing right conduct and good life.
a) Legal Studies b) Ethics c) Law d) None of the above

8.3 Ethical Issues in Technical Communication

- **Plagiarism versus credit for work done by others:** We all know about people in power taking credit for work done by colleagues or subordinates; it seems to be a common part of the way business is done. It's especially common when the powerful person is a man and the less powerful one is a woman.
- **Harassment and undermining of a person's position:** This covers a multitude of behaviors, some extremely subtle such as the constant and deliberate misinterpretation or misrepresentation of someone's actions. (She comes in late and leaves early; she isn't pulling her weight or isn't serious about her work', when in fact she is working evenings at home). Volumes have been written about the application of this ethical misbehavior to keep women in subordinate positions.

- **Stupid vs. malicious actions:** Everybody makes mistakes. Do not jump to the conclusion that an action, no matter how awful, was deliberate (unless, perhaps, that person has a history of malicious actions). Most ethical misconducts are genuine mistakes; someone didn't think about the consequences of their actions or the fact that something might be misinterpreted.
- Another common situation is the dilemma of 'if I tell the truth, someone will be hurt by it'. Which is more important? Depends on the situation. Your interpretation of what they should have done might be quite different from mine.

8.3.1 Telling the 'truth'

Here's an area that seems to be clear-cut:

- Don't falsify data or state as truth something that you know to be false.
- Don't deliberately misrepresent the facts.

Less clear-cut, because they are not always so easy to do, are the following:

- Distinguish between facts and opinions.
- Always check the facts.
- Don't assume that what an 'expert' has said is the truth; experts can make mistakes too, or they might lie.

8.3.2 Rhetoric - choosing your words

Even if you have the facts, you can distort the message, either deliberately or accidentally, through such techniques as:

- **Using loaded words:** Terms like 'admitted' instead of 'said' or 'stated' ('admitted' makes the speaker sound reluctant, as if he or she would prefer to hide something), or 'alarming' and 'dramatic' when a statistical increase or decrease is fairly small. I don't 'admit' that I am a feminist; I may proclaim, announce, or state it.

- **Using discriminatory language:** Technical communicators should avoid sexist, racist or any other kind of derogatory cultural remarks that can hurt one individual or as a whole community. For e.g., Instead of using words like policeman or fireman, 'police officer' or 'fire fighter' should be used.
- **Using sentence structure to convey subtleties of meaning:** Here are two statements that could be made about a co-worker: '*Jean's work is slow, painstaking and meticulous.*' '*Jean's work is meticulous, painstaking and slow.*'

The first sentence leaves one with the impression that Jean might not be the speediest worker, but her results are excellent. The second sentence suggests that although Jean's results are very good, she takes far too long to achieve them. Hope, you can think of similar statements that could be made on a variety of topics.

- **Sensationalizing:** This is related to the use of loaded words, mentioned above. To get the reader's attention, one often feels the need to find something dramatic or sensational to say. When is this ethical, and when isn't it?
- **Using logical fallacies:** Presenting something as proof when it is only evidence is one very common logical fallacy. Sometimes it's caused by a lack of understanding, but other times are deliberate. Other logical fallacies include taking things out of context and jumping to conclusions; there are many more.

8.3.3 How much detail is appropriate?

A common question in scientific and technical writing is how much detail one could include? In many cases lack of space requires omission of detail. In other cases, the writer makes a judgment that the reader doesn't need to know the detail, or that the detail is more than the audience will understand. Sometimes these judgments can be used to hide information that you don't

want to disseminate, but in most cases the writer isn't trying to hide anything. The writer's job often is to explain a complex topic at an appropriate level for the audience.

For example, users of a word processing program do not need to know, and in most cases do not want to know, how the computer or the program work. The users simply want to know how to use the program to accomplish their tasks. So the writer chooses only that subset of information that contributes to this goal, and includes a reference to a technical manual or other source for those users who do want to know the computing details.

The choices are more complex when summarizing results of scientific papers or studies in the press, or in Environmental Impact Statements, and so on, because of some of the problems noted earlier under Rhetoric.

8.3.4 Choosing between advocacy and objectivity

Some scientific and technical communication is clearly advocacy. Urging people to 'slip, slap and slop' certainly simplifies the issues by cutting out most of the detail, and it certainly is advocating a course of action. A discussion paper on the causes and prevention of skin cancer should cite differing opinions and give references. A major criticism of much of the information on smoking is that it's not 'objective'; it clearly takes a pro- or anti-smoking stance. Whether that is good, bad, or indifferent is a matter of opinion, but it is certainly an ethical issue.

8.4 STC Code for Communicators

The following code is reprinted from the Society for Technical Communication's Annual Report 1993-1994, as an example of the sort of ethical code that communicators might follow. Obviously it does not try to spell out what to do in specific instances, but rather summarizes broad categories of thought and behavior. The American spelling is from the original.

As a technical communicator, I am the bridge between those who create ideas and those who use them. Because I recognize that the quality of my services directly affects how well ideas are understood, I am committed to excellence in performance and the highest standards of ethical behavior. I value the worth of the ideas I am transmitting and the cost of developing and communicating those ideas. I also value the time and effort spent by those who read or see or hear my communication. I therefore recognize my responsibility to communicate technical information truthfully, clearly, and economically.

My commitment to professional excellence and ethical behavior means that I will:

- Use language and visuals with precision.
- Prefer simple, direct expression of ideas.
- Satisfy the audience's need for information, not my own need for self-expression.
- Hold myself responsible for how well my audience understands my message.
- Respect the work of colleagues, knowing that a communication problem may have more than one solution.
- Strive continually to improve my professional competence.
- Promote a climate that encourages the exercise of professional judgment and that attracts talented individuals to careers in technical communication.

Self Assessment Question (SAQ)

2. _____ is an example of the sort of ethical code that technical communicators might follow.
- a) TWA Code b) STC code c) ASNE Code d) Editor's Guild Code

8.5 Summary

The role of the modern technical writer and communicator is expanding rapidly, and as a result, ethics plays a vital role in technical writing in many ways. Therefore, a better knowledge about Technical Communication Code of Ethics or any other Ethical Standards will empower technical writers to judge what's good and bad in Technical communication.

8.6 Terminal Questions

1. Briefly explain the major ethical issues in Technical Communication.
2. Compare Legality and Ethics.

8.7 Answers

SAQs

1. b) Ethics
2. b) STC

TQs

1. Refer Sub Unit 8.3
2. Refer Sub Unit 8.2

APPENDIX**THE ASSOCIATED PRESS STYLE GUIDE****Style Manual – The Associated Press**

The Associated Press was founded in 1848 as a cooperative effort among six New York newspapers that wished to pool resources for gathering international news. Today, with over 3,700 employees in 121 countries, the AP is the world's single largest news organization. Every day, more than a billion people read, hear or see AP news.

From the beginning, AP reporters have written their dispatches for readers from diverse social, economic and educational backgrounds and a wide range of political views. The AP therefore strives to keep its writing style easy to read, concise and free of bias. *The Associated Press Stylebook*, first published in 1977, clarified the news organization's rules on grammar, spelling, punctuation and usage. Now in its sixth edition, the *Stylebook* is the standard style guide for most U.S. newspapers, magazines and public relations firms.

The following Quick Reference is taken from *The Associated Press Stylebook and Libel Manual*, Sixth Trade Edition.

Numbers

- Spell out the numbers one through nine; for 10 and up, use Arabic numerals. For ages and percentages, always use Arabic numerals, even for numbers less than 10.
- Spell out numerals that start a sentence; if the result is awkward, recast the sentence: *Twenty-seven detainees were released yesterday. Yesterday, 993 freshmen entered the college.*
- The one exception to this rule is in a sentence that begins with a calendar year: *1938 was a turbulent year for Leon.*

- Use Roman numerals for wars, monarchs and Popes: *World War II, King George VI, Pope John XXIII*
- The figures 1, 2, 10, 101, and so on and the corresponding words – one, two, ten, one hundred one and so on – are called cardinal numbers. The terms 1st, 2nd, 10th, 101st, first, second, tenth, one hundred first and so on are called ordinal numbers.
- For large numbers: use a hyphen to connect a word ending in y to another word: *twenty-one, one hundred forty-three, seventy-six thousand five hundred eighty-seven*
- Do not use commas between other separate words that are part of one number: *one thousand one hundred fifty-five*
- Spell out casual expressions: *A thousand times no!*
- Proper names: use words or numerals according to an organization's practice: *3M, Twentieth Century Fund, Big Ten*

Quick

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Abbreviations

United States

- as a **noun**, United States: *The prime minister left for the United States yesterday.*
- as an **adjective**, U.S. (no spaces): *A U.S. soldier was killed in Baghdad yesterday.*
- as part of **organization names** (see the *AP Stylebook* under "U.S.")

States

- Spell out the names of the states in text when they appear alone: *Wildfires continued to rage through southern California yesterday.*

- Abbreviate them when they appear in conjunction with the name of a city, town, village or military base: *Needham, Mass., Oxnard Air Force Base, Calif.*
- Do not abbreviate Alaska, Hawaii, Idaho, Iowa, Maine, Ohio, Texas and Utah (the two states that are not part of the contiguous United States and the states that are five letters or fewer)

When abbreviating U.S. states, do so as follows:

Ala. Ga. Mich. N.J. R.I. Wis.

Ariz. Ill. Minn. N.M. S.C. Wyo.

Ark. Ind. Miss. N.Y. S.D.

Calif. Kan. Mo. N.C. Tenn.

Colo. Ky. Mont. N. D. Vt.

Conn. La. Neb. Okla. Va.

Del. Md. Nev. Ore. Wash.

Fla. Mass. N.H. Pa. W.Va.

- Place one comma between the city and the state name, and another after the state name, unless at the end of a sentence or in a dateline (e.g. She traveled from San Diego, Calif., to go to school in Kansas City, Mo. Now, she's thinking of moving to Santa Fe, N.M.)

Datelines

- Put the city name in CAPITAL LETTERS, usually followed by the state, country or territory where the city is located.
- Domestic and international large cities stand alone in datelines (see the *AP Stylebook* under "datelines" for a complete listing).
- Do not abbreviate Canadian provinces and territories.
- In most cases, use the conventionally accepted short form of a nation's official name (e.g. Argentina rather than Republic of Argentina), but there are exceptions.

- Use an article with El Salvador (but not with Gambia, Niger, and so on).
- Within stories: Follow the city name with further identification in most cases where it is not in the same state or nation as the dateline city.

Academic Degrees

- Avoid abbreviations: Billy Bob, who has a doctorate in philosophy.
- Use an apostrophe in bachelor's degree, a master's, etc.
- There is no apostrophe in Bachelor of Arts or Master of Science.
- Use abbreviations such as B.A., M.A. and Ph.D. only when the need to identify many people by degree on first reference would make the preferred method cumbersome; use the abbreviations only after a full name and set the abbreviations off with commas: *Samuel Cotton, Ph.D., lectured yesterday on bioethics.*

Dates

- Always use Arabic figures, without *st*, *nd*, *rd* or *th*.
- Capitalize months.
- When a month is used with a specific date, abbreviate only Jan., Feb., Aug., Sept., Oct., Nov. and Dec. (e.g. Oct. 4 was the day of her birthday.)
- When a phrase lists only a month and year, do not separate the month and the year with commas. (e.g. February 1980 was his best month.)
- When a phrase refers to a month, day and year, set off the year with commas. (e.g. Aug. 20, 1964, was the day they had all been waiting for.)

Time

- Use figures except for noon and midnight
- Use a colon to separate hours from minutes (e.g. 2:30 a.m.)
- 4 o'clock is acceptable, but time listings with a.m. or p.m. are preferred

Punctuation**apostrophe (')**

- For plural nouns ending in *s*, add only an apostrophe: *the girls' toys, states' rights*.
- For singular common nouns ending in *s*, add *'s*: *the hostess's invitation, the witness's answer*.
- For singular proper names ending in *s*, use only an apostrophe: *Descartes' theories, Kansas' schools*.
- For singular proper names ending in *s* sounds such as *x*, *ce*, and *z*, use *'s*: *Marx's theories, the prince's life*.
- For plurals of a single letter, add *'s*: *Mind your p's and q's, the Red Sox defeated the Oakland A's*.
- Do not use *'s* for plurals of numbers, or multiple letter combinations: *the 1980s, RBIs*

colon (:)

- Capitalize the first word after a colon only if it is a proper noun or the start of a complete sentence: *He promised this: The company will make good all the losses*. But: *There were three considerations: expense, time and feasibility*.
- Colons go outside quotation marks unless they are part of the quoted material.

Tech Terms

cyberspace database

dot-com DSL

e-mail home page

hyperlink hypertext

Internet intranet

login logoff

logon online

shareware Web site

webcast webmaster

World Wide Web

comma (,)

- Do not put a comma before the conjunction in a simple series: *John, Paul, George and Ringo; red, white and blue.*
- Use a comma to set off a person's hometown and age: *Jane Doe, Framingham, was absent. Joe Blow, 34, was arrested yesterday.*

dash (–)

- Make a dash by striking the hyphen key twice. Put a space on either side of the dash: *Smith offered a plan – it was unprecedented – to raise revenues.*
- Use a dash after a dateline: *SOMERVILLE – The city is broke.*

Hyphen (–)

- Use a hyphen for compound adjectives before the noun: *well-known actor, fulltime job, 20-year sentence*
- Do not use a hyphen when the compound modifier occurs after the verb: *The actor was well known. Her job became full time. He was sentenced to 20 years.*
- Do not use a hyphen to denote an abrupt change in a sentence – use a dash.

Parentheses

- The perceived need for parentheses is an indication that your sentence is becoming contorted. Try to rewrite the sentence, putting the incidental information in commas, dashes or in another sentence. If you do use parentheses, follow these guidelines:

- If the material is inside a sentence, place the period outside the parentheses.
- If the parenthetical statement is a complete independent sentence, place the period inside the parentheses.

Period

- Use a single space after the period at the end of a sentence.
- Do not put a space between initials: *C.S. Lewis; G.K. Chesterton.*

Quotation marks (“ ”)

- In dialogue, each person's words are placed in a separate paragraph, with quotation marks at the beginning and end of each person's speech.
- Periods and commas always go within quotation marks.
- Dashes, semicolons, question marks and exclamation points go within the quotation marks when they apply to the quoted material. They go outside when they apply to the whole sentence.
- Use single marks for quotes within quotes: *She said, "He told me, 'I love you.'"*

Titles

- Of **books, computer games, movies, operas, plays, poems, songs, television programs, lectures, speeches** and **works of art**:
 - Put quotation marks around the title.
 - Capitalize the first and last words of the title.
 - Capitalize the principal words, including all verbs and prepositions and conjunctions with more than three letters
 - Translate a foreign title into English, unless the American public knows the work by its foreign name: *Nietzsche's "Thus Spake Zarathustra"; Mozart's "Magic Flute"* BUT *"Amores Perros"; "The Bhagavad-Gita."*

- Of **newspapers** and **magazines**:
 - Do not place in quotation marks.
 - Capitalize *the* in the name if that is the way the publication prefers to be known.
 - Lowercase *the* before names if listing several publications, some of which use *the* as part of the name and some of which do not: *Time Newsweek, the Washington Post, and the New York Times*.
 - Where location is needed but not part of the official name, use parentheses: *The Huntsville (Ala.) Times, The Toledo (Ohio) Blade*.
- Of **places**:
 - The best reference for all place names is the “U.S. Postal Service Directory of Post Offices.”
 - The best reference for foreign geographic names is the most recent edition of “Webster’s New World College Dictionary.” The second-best reference is the “National Geographic Atlas of the World.”
 - Lowercase compass directions: *The warm front is moving east*.
 - Capitalize names of U.S. regions: *The Northeast depends on the Midwest for its food supply*.
 - The “Middle East” applies to Afghanistan, Cyprus, Egypt, Iran, Iraq, Israel, Kuwait, Jordan, Lebanon, Oman, Qatar, Saudi Arabia, South Yemen, Sudan, Syria, Turkey, United Arab Emirates and Yemen. The term is preferable to “Mideast.”
- Of **ethnic groups**:
 - The preferred usage for African Americans is “black.” The term is not capitalized.
 - Preferred usage for Caucasians is “white,” also not capitalized.
 - Preferred usage for Asian people is “Asian,” capitalized. Please note that in British usage the term applies only to people of the Indian Subcontinent.

- “American Indian,” capitalized with no hyphen, is preferred over “Native American.”
- Of **seasons**:
 - Lowercase “spring,” “summer,” “fall” and “winter” and derivatives such as “wintertime” unless part of a formal name: *I love Paris in the springtime; the Winter Olympics.*

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