Dr. Sudarsana Sarkar

Describing – Technical description of objects, processes and instruction writing

Technical description is a key part of any descriptive technical document because it defines objects and/or processes. Basically, a technical description divides a complex item or topic into more manageable components. It defines, describes and illustrates the various elements contained within the whole – whether an object, process or concept. The general guideline for writing technical descriptions is to generate iterations of naming, defining, describing and illustrating.

Audience analysis

The writing needs to meet the needs, interests and backgrounds of the intended readers. Audiences must be analysed in terms of characteristics such as:

- Background – Knowledge, Experience, Training
- Needs and Interests
- Wide variability in an audience
- Other demographic characteristics (example: age groups)

The type of audience can also be identified. The common division of audience into categories (especially for technical writing) is as follows:

- Experts – These are the people who know the theory and the product. They designed it and they tested it. 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 products that the experts design and theorize about.
- Executives – These are the people who make economic, administrative, legal, governmental, and political decisions on the products that the experts and technicians work on.
- Non-specialists – These people have the least technical knowledge. They may want to use new product to accomplish their tasks, or they may be curious about a particular technical matter and want to learn about it.

Once the audience has been analyzed, one needs to ensure that one connects with the readers and tailors the information as per the needs and interests of the readers. Some of these methods for non-specialist audience are:

- Change the level of information.
- Change the organization of the information.
- Check to see whether key information is missing.
- Omit unnecessary information.
- Add examples.
- Strengthen transitions.

- Write stronger introduction
- Work on sentence clarity and economy
- Use more or different graphics

Guidelines for writing good descriptions:

- Organization:
    - Overview – Begin with a brief overview that reveals the object's:
        - Overall framework, arrangement or shape
        - Purpose or function
    - Parts – Divide the object into parts and describe each part:
        - In sufficient detail so that reader is able to use, make, or draw it
        - In a way that reveals its role and its relation to other parts
    - Order – Organize the part descriptions in one of the following orders:
        - Spatial order (top to bottom, outside to inside)
        - Priority order (most to least important)
        - Chronological order (order of [dis]assembly)
- Content
    - Specifics
        - Include relevant specific features (such as size, shape, color, material and technical names)
        - Omit irrelevant background, confusing details and needless words
    - Comparison – Compare features or parts with other things already familiar
    - Contrast – Contrast properties with the properties of others to reveal their significance
- Structure
    - Format – Clarify the text with
        - Heads – Identify topics with clear, nested section headings
        - Lists – Itemize related features with indenting and marks
        - Figures – Integrate figures and text with labels and references
    - Verbal cues – Guide the reader through the instructions with:
        - Parallelism – Use parallel words and phrases for parallel ideas
        - Proleptics – Use verbal links (also, but, however, etc.) to signal how the description fits together

Writing technical descriptions:

The main steps involved in writing technical descriptions include:

- Naming - naming the objects and processes being described

- Definition - assigning meaning to objects
- Description - highlighting certain aspects of the object
- Illustrations - description using graphic elements rather than words. Graphics are very useful as aids to transmitting meaning, especially when language is a barrier to understanding. However, in technical writing it must be understood that the illustration does not replace the words, rather it enhances the meaning of the words.

Description (Object):

- A picture in words
- Object description—how does it look like?
- Process description—how does it work? Why does it work this way?
- Description of the object should include:
    - a definition of the object to be described
        - by class and differentiation
        - form and function
        - etymology
    - the classification – apparatus/ instrument/ machine/ tool/ mechanism/ engine.
- Example
    - A hydrometer is an instrument used for measuring the specific gravity of liquids.
    - A steam engine is a machine which converts heat energy into mechanical energy.
- Format of the content can be structured as –Definition, Diagram, Working, Description. (Other sections possible are Applications/ Use/ Advantages/ Disadvantages /Types).

Description (Process):

- Explaining a process is for a reader who wants to understand the working.
- The format of the content can be structured as:
    - Definition
    - Apparatus/ Equipment/ Material required
    - Diagram
    - One complete cycle of operation
    - Hazard Notations: Caution & Warning (Caution –Information given when there is a chance of damage to equipment. Warning—Information given when there is chance of serious injury to the person.)

Description (Object) in detail:

Description is the process of making an object, idea, or process known to someone who is unfamiliar with it. A description will use words and illustrations to outline the shape, the material, the purpose or function, and the relationship of one object, idea or process to other objects, ideas or processes. A description attempts to make the unknown familiar; therefore, it

occasionally uses the light of the familiar to illuminate the unfamiliar. In this respect, it is common for descriptions to use analogies, metaphors, or similes to get an idea across. Description also relies on strategies of organization such as division and classification, comparison and contrast. Division and classification is the process of breaking down complex systems into more manageable components and then grouping components together based on some over-riding determinant such as spatial relationship, functional or genetic similarity, chronological relationship, or host of other bases upon which a classification can take place. Compare and contrast method depends on a fixed set of criteria such as cost, practicality, efficiency or options available in order to analyze the choices available to the user. Compare and contrast analysis is result-oriented and sometimes persuasive, rather than being strictly informative.