# 2 FIB - Academic and Professional Speaking Skills

# Introductory Unit - Principles of APSS

## Characteristics of technichal communication: a problem - solving approach

### 1. What is technical communication?

Technical communication is the type of communication (written, spoken, electronic) that takes place in technical settings, dealing with technical contents. It applies to academic and professional communication. Technical communication is practical. It is characterized by being **user-oriented** and **efficient**:

Technical documents are **user-oriented**

> Instead of focusing on the writer's desire for self-expression, a technical document addresses the user's desire for information. This doesn't mean you should seem robotic, without any personality (or *voice*) at all. Your document may in fact reveal a lot about you (your competence, knowledge, integrity), but it rarely focuses on you personally. Your audience is interested in *what you have done*, *what you recommend*, or *how you speak for your company*; they have only a professional interest in **who you are**.
>
> See the following example:
>
> > *Computers are not a particularly forgiving breed. The wrong key struck or the wrong command typed is almost sure to avenge itself on the inattentive user by banishing the document to some electronic trash can.*
>
> This personal view conveys a good deal about the writer's resentment and anxiety but very little about computers themselves. However, the following example can be called technical communication because it focuses on the subject, on what the writer has done, and on what the user should do:
>
> > *On VR 320 terminals, the BREAK key is adjacent to keys used for text editing and special functions. Too often, users inadvertently strike the BREAK key, causing the program to quit prematurely. To prevent the problem, we have modified all database management terminals: to quit a program, you must now strike BREAK twice successively.*
>
> This next example can also be called technical communication because it focuses on what the writer recommends:
>
> > *I recommend that our Web server be upgraded by a maximum addition to RAM, a new T–1 Internet connection, and a 40 GB RAID disk array. This expansion will (1) increase the system's responsiveness, (2) allow for real-time videoconferencing, and (3) allow us to move all third-party Web hosting to our own network.*

Technical documents strive for **efficiency**

> In any system, "efficiency" is the ratio of useful output to input. For the product that comes out, how much energy goes in? When a system is efficient, the output nearly equals the input. Similarly, a document's efficiency can be measured by how hard the user works to understand the message. No one should have to spend ten minutes deciphering a message worth only five minutes, as in this example:
>
> (inneficient)
>
>> *At this point in time, we are presently awaiting an on-site inspection by vendor representatives relative to electrical utilization adaptations necessary for the new computer installation. Meanwhile, all staff are asked to respect the off-limits designation of said location, as requested, due to liability insurance provisions requiring the online status of the computer.* Notice how hard we had to work with the previous message to extract information that could be expressed this efficiently:
>
> (More efficient)
>
>> *Hardware consultants soon will inspect our new computer room to recommend appropriate wiring. Because our insurance covers only an operational computer, this room must remain off limits until the computer is fully installed.*
>
> Inefficient texts (whether oral or written) have varied origins. Even when the information is accurate, errors like the following create needless labor:
>
> - more (or less) information than people need
> - irrelevant or uninterpreted information
> - confusing organization
> - jargon or technical expressions people cannot understand
> - more words than people need
> - uninviting appearance or confusing layout
> - no visual aids when people need or expect them
>
> An efficient text sorts, organizes, and interprets information to suit the audiences's needs, abilities, and interests.
>
> An efficient document is carefully designed to include these elements:
>
> - *content* that makes the document worth reading
> - *organization* that guides the user and emphasizes important material
> - *style* that promotes rapid reading and accurate understanding
> - *visuals* (graphs, diagrams, pictures) that clarify concepts and relationships, and that substitute for words whenever possible
> - *format* (layout, typeface) that is accessible and appealing
> - *supplements* (abstracts, appendices) that allow users with different needs to read only those sections required for their work

More specifically, technical communication has the following main characteristics:

1. **It is functional.**

It serves a specific purpose. As a communicator, you need to transmit certain information for a certain purpose. In turn, your audience reads or listens to your text because of a specific need (e.g. to learn, to make a decision, etc.).

2. **It is concerned with audience.**

An efficient technical text takes into account the characteristics of the audience (level of knowledge, purpose, etc.).

3. **It involves a choice in format.**

Technical communication is highly conventional. We use different types of texts for different purposes (e.g. report, research paper, lecture, etc.). They have certain characteristics (and "rules") that are important to take into account.

4. **Organization is apparent to the audience.**

In the technical fields, we communicate complex ideas that should be transmitted in a concise, clear and unambiguous manner to the audience. Therefore, we need to follow a clear organization pattern that the audience can identify.

5. **Composition and design play a key role.**

These characteristics are related to the conventional nature of technical communication. Technical professionals already know what types of texts are used in the field and thus have certain expectations about them.

6. **Visuals are very important.**

Because of the nature of technical subjects, technical texts usually combine verbal and graphic information. They should be used and interpreted in an interrelated, complementary manner.

7. **Accurate, precise terminology is used; we need exact, concrete words.**

Because of the need to transmit detailed and precise information in a clear manner, we use accurate terminology (at different levels of specialization, depending on the audience). In any case, and as opposed to everyday conversation, we use exact, concrete words.

8. **Certain conventions (grammar, usage, etc.) are used.**

Apart from conventions in format, technical texts also show certain conventions in language (grammar, usage, etc.). It is important to become familiar with the ways in which different types of information are conveyed in English and what structures and expressions are used.

9. **It lends itself to a problem-solving approach.**

Engineers and other technical professionals are involved in solving problems. They analyse the situation and work out the most appropriate strategy to reach a satisfactory solution to that problem. Technical communication is similar in this respect. Engineers can learn to communicate more effectively if they apply a problem-solving approach, using the skills they already possess.

## What do we mean by a problem-solving approach?

A problem-solving approach is used in engineering, and it is especially appropriate to approach technical communication. When engineers are faced with the task of designing a text (written or spoken), in fact, they are faced with **a problem to solve** (effective technical communication). In order to succeed in communicating their message, they need an appropriate rhetorical strategy.

Thus, within a problem-solving approach to technical communication, we approach the process of designing a text as follows:

```
1  TECHNICAL PROFESSIONAL → TECHNICAL COMMUNICATOR:
2    → Involved in PLANNING A TEXT (SPOKEN, WRITTEN, ELECTRONIC)
3      → Devising an appropriate rhetorical strategy for communication
4        → technical communication = problem-solving
5          → a series of steps = decision-making`
```

By rhetorical strategy, we mean the key decisions we make in order to ensure that our text is efficient and effective. In communication, rhetoric refers to the type of information we transmit and how we organize this information. Therefore, we must adopt an appropriate rhetorical strategy, which involves answering the following main questions:

- **WHO** is the text addressed to?
- **WHY** is the text needed?
- **WHAT** information do I need to convey?
- **HOW** should I organize it in order to communicate effectively?

The more precise our answers to these basic questions, the easier the task of making decisions based on these considerations. Designing a text involves a series of decisions, at different stages of the process of preparing a text.

In order to identify our audience and characteristics, we need to consider the following types of audiences, which are common in technical communication.

- *Experts*:
  - They are people who know the theory and the product inside and out. They designed it, they tested it, and they know everything about it. Often, they have advanced degrees and operate in academic settings or in research and development areas of the government and business worlds. The nonspecialist 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*:
  - They build, operate, maintain, and repair the stuff that the experts design and theorize about. Theirs is 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 stuff 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 nonspecialists.
- *Technical students*:
  - Students may have different levels of specialization but they are all interested both in theory and practice. They need explanations of new concepts, descriptions and exemplification to understand

concepts and implement technological solutions.

- *Nonspecialists / laypeople*:
    - 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.

# Exercises

## 1. GENRE–TYPES OF TECHNICAL DOCUMENTS (ORAL OR WRITTEN)

What kinds of documents are produced in the technical professions? Match the written genres with their definitions:

| Genre |
|---|
| Demo |
| Lecture |
| Brochure |
| Report |
| User guide |
| Manual |
| Agenda |
| Seminar |

| Definition |
|---|
| A small group of students meeting regularly under the guidance of a tutor, professor, etc, to exchange information, discuss theories, etc |
| A detailed formal account giving the results of an investigation or the conclusions and recommendations to consider a matter or proposal |
| A formal talk on a serious or specialist subject given to a group of people, especially students |
| A list of matters to be considered or done (usually in a meeting) |
| A small pamphlet, often containing promotional material or product information |
| A pamphlet that offers basic information for users |
| A small reference book, usually giving instructions |
| An explanation, display, illustration, or experiment showing how something works |

Are any of the genres above mainly academic? Which?

## 2. TECHNICAL COMMUNICATION IN SPEECH AND WRITING

Remember the word TEXT does not necessarily mean a written document, but you can also have oral texts. This means that the principles of technical communication can also be applied to oral texts. In a communicative situation in an academic or workplace setting, it is very important to choose the most appropriate MEDIUM (i.e. speech or writing) and type of text (GENRE) to suit your purposes.

**TASK 1.** Mark the following genres (all of them typical of academic and workplace settings) as S (for speech) or W (for writing). Then, try to think of more genres you can add to the list. Be careful, and remember we're dealing with technical communication.

- telephonecall
- videoconference
- emailmessage
- lecture
- technicalmanual
- technicalpresentation
- abstract
- researchpaper
- meeting
- thesis/projectdefense
- …

**TASK 2.** Do you have any experience in those genres? Discuss your views. Think about the situations in which these genres were used. Now, each of you (individually) should choose two or three of the above genres and, thinking of the situations in which they are normally used, take some notes with recommendations on how to make your technical text (oral or written, remember) both EFFECTIVE and EFFICIENT. Present them to the rest of the group.

# 3. TECHNICAL COMMUNICATION AT UNIVERSITY

Why do you communicate at university? To whom is this communication addressed? Try to define the different types of texts (oral and written) that you use. Identify the different types of audiences that you usually address and how they affect the way you plan and design your texts. Discuss them with fellow participants and try to come up with a common classification.