

TCE Communication and Expression Techniques

Level: 2nd Year (Licence)

Biological Sciences

Food Sciences

Agricultural Sciences

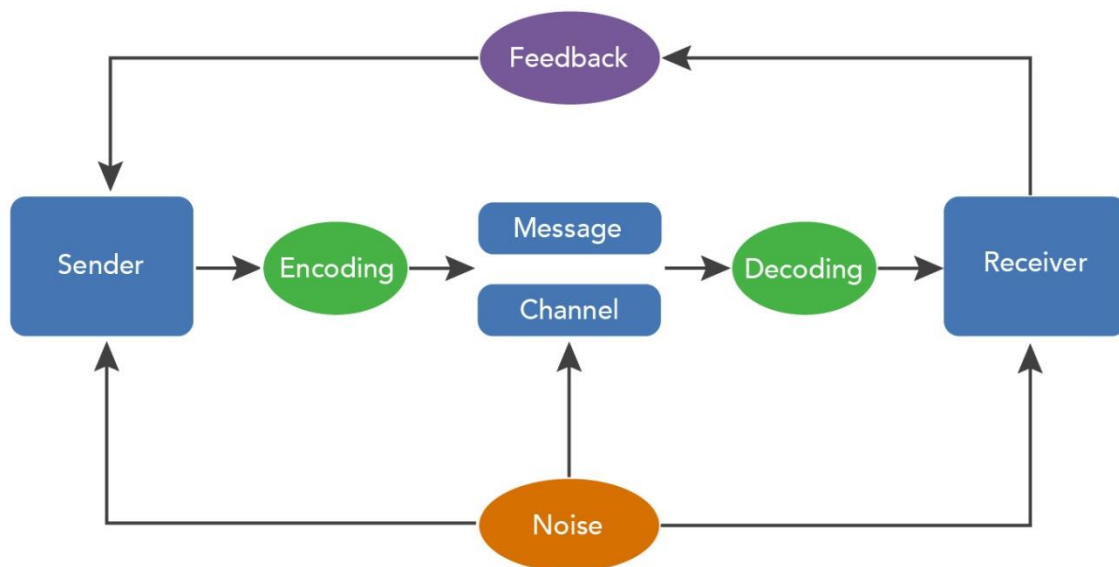
Ecology and Environmental Sciences

Types of Communication

Definition of Communication

Communication is the process of exchanging information, ideas, or feelings between individuals, groups, or organizations. It involves a **sender**, a **message**, a **channel**, and a **receiver**, followed by **feedback**.

Effective communication is essential in daily life, education, research, and professional fields, including biology and medicine.



- **Sender:** The originator of the message
- **Encoding:** Transforming thoughts into a communicable form (e.g., words, symbols).
- **Message:** The information being transmitted.
- **Channel:** The medium used to deliver the message (e.g., speech, text, media).
- **Decoding:** Interpreting and understanding the message.
- **Receiver:** The person who gets the message.
- **Feedback:** The response from the receiver back to the sender, ensuring understanding.
- **Noise:** Any interference or barrier that distorts or hinders the communication

Main Types of Communication

A. Verbal Communication

Definition: Use of spoken or written words to share information.

Forms:

Oral (conversations, lectures, presentations, discussions).

Written (letters, scientific articles, reports, emails).

Advantages: Clear, direct, fast, permanent (in written form).

Limitations: Misunderstanding if words are not chosen carefully

B. Non-Verbal Communication

Definition: Transmission of messages without words.

Examples: Body language, gestures, facial expressions, eye contact, tone of voice, posture.

Functions:

Reinforces verbal communication.

Expresses emotions (smile = approval, frown = disapproval).

Can contradict spoken words (saying “I’m fine” while looking sad).

Importance: Often more powerful than words

C. Visual Communication

Definition: Use of visual elements to transmit information.

Examples in science: Graphs, charts, diagrams, pictures, slides, posters, microscopy images.

Advantages: Easy to understand, memorable, useful for complex data.

Limitations: May oversimplify or be misinterpreted.

D. Written Communication

Definition: is the process of conveying information through written symbols (letters, words, sentences). In science, it is essential for recording, sharing, and preserving knowledge.

Examples in science: Scientific papers, lab reports, scientific posters, theses and dissertations, emails and professional.

Advantages: Provides a permanent record, ensures clarity and precision, reaches a wide audience, essential for professional and academic work.

Limitations: Time-consuming to prepare, delayed feedback, needs good writing skills, may be misunderstood if not clear.

E. Digital Communication

Definition: Exchange of information using modern technology and online platforms.

Examples: Emails, social media, video conferences (Zoom, Teams), online learning platforms.

Importance in science: Sharing research globally, publishing in journals, attending virtual conferences.

Advantages: Fast, global, interactive.

Challenges: Risk of misinformation, lack of face-to-face interaction.

Other Classifications of Communication

Formal vs. Informal Communication:

Formal → official, structured (e.g., reports, meetings, lectures).

Informal → casual, personal (e.g., chatting with colleagues).

One-way vs. Two-way Communication:

One-way → sender transmits without feedback (e.g., posters, announcements).

Two-way → sender and receiver interact (e.g., discussions, interviews).

Intrapersonal vs. Interpersonal Communication:

Intrapersonal → communication with oneself (thinking, self-reflection).

Interpersonal → direct exchange between two or more people.

Importance of Communication in Science and Biology

To present research results clearly (articles, posters, presentations).

To teach and learn complex concepts.

To collaborate with other scientists worldwide.

To raise public awareness about health, environment, and scientific discoveries.

Improving Communication Skills

If you want to improve your communication skills and become an effective leader, here are some tips:

- 1) **Listen more than you talk** - Ask questions that help you understand the other person's point of view.
This is one way to get information from someone else.
- 2) **Show interest** - Don't just listen; show interest by asking about what is being said. You'll gain respect when you show interest in what they have to say.
- 3) **Be clear** - Make sure everyone understands exactly what you mean. Avoid using vague words like "maybe" or "kind of."
- 4) **Use appropriate body language** - Stand up straight, keep eye contact, make gestures with your hands, and smile. These actions send signals to the listener that you care about them and respect them.
- 5) **Don't interrupt** - Let people finish what they are saying before responding. Interruptions cause listeners to lose focus.
- 6) **Keep your emotions under control** - When you feel angry, frustrated or upset, take a few deep breaths and count to ten. Then tell yourself that you will remain calm and collected until you've had time to think things over

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