Communication Techniques in Practice

DO YOU KNOW PEOPLE who dominate a conversation but never seem willing to listen? Maybe you have encountered people who are quiet and do not contribute to a conversation. Effective communication requires you to share information and to listen.

Objective:

Use standard terms to define communication and technical drawing.

Key Terms:

artifacts
computer-aided drafting (CAD)
context
interpersonal communication
manual drafting
nonverbal communication
orthographic projection drawing
pictorial drawing
sketches
technical drawing
verbal communication

Interpersonal Communication and Technical Drawing

Interpersonal communication is the transfer of information between two or more people when they share ideas, thoughts, and feelings. In interpersonal communication, messages are sent and received. In successful interpersonal communication, the message sender and receiver understand meanings and implications and exchange feedback. Listening and reflecting are nonverbal aspects of interpersonal communication. You communicate on different interpersonal levels with different people. For instance, communicating with your parents differs from talking with friends on the phone.

DIGGING DEEPER...

UNCOVERING ADDITIONAL FACTS: Good Interpersonal Communication

You can improve your interpersonal communication skills by remembering the purpose of communication is to share ideas, thoughts, and feelings. When you have a phone conversation with a friend, good communication skills require you to listen as well as talk. These practices are important in all the interactions you have, including discussing a question with a teacher, interviewing for a job, and participating in discussion groups.

Members of effective group discussions generate creative ideas and solve problems. Effective group members show respect for each other. Being able to listen and to respect other people's opinions is vital. Cooperation is important to the group's success. When members practice good communication skills, they are able to work together toward common goals.

Effective group members are considerate and make an effort to help each other understand information. When someone in the group is confused, the other group members take time to explain. Effective group members contribute their fair share, and everyone in the group is encouraged to add ideas and contribute to the discussion.

VERBAL AND NONVERBAL

Verbal communication is the use of spoken or written words to communicate. **Nonverbal communication** is wordless communication that uses facial expressions and body language, eye contact and gestures, voice quality, clothing, sound, photographs, and symbols to communicate. Participants need to have an understanding of each other and must understand the context of the communication. The **context** is shared circumstances or facts that surround a communication. Context is affected by location, environment, emotional state, and the relationship between communicators (e.g., parent and child or boss and employee). Communication does not happen in isolation. It is affected by the world around you. In written communication, context includes the information preceding and following the message.

TECHNICAL DRAWING

Technical drawing (drafting) is the process of making detailed drawings that visually communicate construction plans. Technical drawing is used by architects, designers, drafters, engineers, and any other related professions that depend on facts and figures. Technical drawing standards employ uniform symbols and units of measure, notations, line styles, and dimensions that compose a visual language easily understood by others. Technical drawing uses graphics to communicate details of complex physical **artifacts** (tangible items created for practical purposes), such as products and buildings. Technical drawing can illustrate difficult technical ideas better than written or spoken words.

Orthographic Projection Drawing

Orthographic projection drawing is the use of a two-dimensional (2D) drawing to represent a three-dimensional (3D) object. Orthographic drawings show three views of an object. The three elevations show the front view, its right and left sides, and the top view.

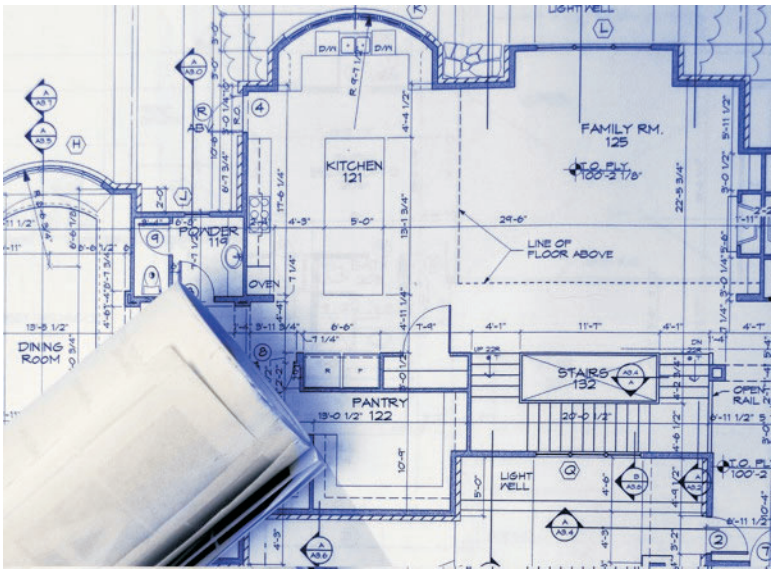


FIGURE 1. Architectural blueprints rendered with orthographic projection drawing show a three-dimensional image in two-dimensional format.

Pictorial Drawing

A **pictorial drawing** is the use of a three-dimensional (3D) drawing to represent a three-dimensional object. It looks more like the actual object than an orthographic projection view. Either sketched freehand or made with drawing tools, pictorial drawings are often used by engineers to share ideas with clients or assistants. Pictorial drawings are made in three styles: isometric, perspective, and planometric. The isometric drawing shows much detail, and the lines are the same length as the object. Perspective drawings provide the most accurate view of an object, but the measurements are distorted. In addition, planometric drawings are used to show interiors on house plans.

FIGURE 2. A pictorial drawing illustrates a port in Constantinople using a three-dimensional perspective format.

Sketches

Sketches are drawings rapidly created by hand that are not intended to serve as finished works. They are convenient and quick but they show more technical detail than words can describe. Sketches may depict something an artist sees, so they may be the first step in the pro-

cess of recording details for later development, or they may be a fast way to illustrate ideas or images.

Manual Drafting

Manual drafting is making a technical drawing by hand that illustrates the construction or function of an object. Necessary drafting tools include a drafting table, pencils or pens, a t-square, a straight edge, a compass, and a ruler. These are used to create lines, curves, dimensions, and notes to visually describe an object. Manual drafting, used in industry and engineering, is considered an art and a learned technique.

Computer-Aided Drafting (CAD)

Computer-aided drafting (CAD) is the use of computer software to create, modify, and analyze technical designs. The object is displayed on a computer screen while the CAD operator draws. CAD software improves designs; conveys information about materials, processes, and dimensions; and creates a database, which are all useful contributions to manufacturing. CAD files may be printed, emailed, copied, and communicated in other electronic ways. CAD is used in automotive, shipbuilding, aerospace, and architectural industries. In addition, CAD is used in computer animation to create special effects in movies and advertising.

FIGURE 3. A design engineer uses computer-aided drafting to create a product.

Summary:

Interpersonal communication is the transfer of information between two or more people when they share ideas, thoughts, and/or feelings. Listening and reflecting are nonverbal aspects of interpersonal communication. You communicate on different interpersonal levels with different people.

Technical drawing is a nonverbal form of communication conducted throughout industry. Technical drawing ranges from precise product design to rough ideas. Orthographic projection drawing details images in a two-dimensional format. Pictorial drawing creates a more realistic depiction in three-dimensional images. Sketches are drawings rapidly created by hand that are not intended to serve as fin-

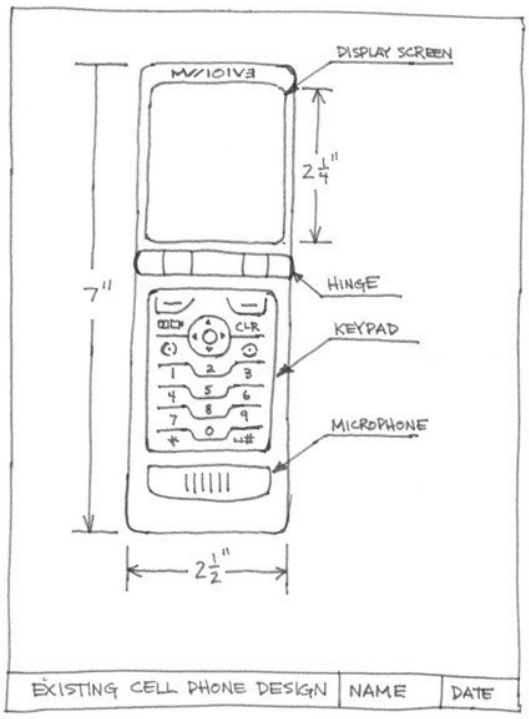
ished works. Manual drafting is used in engineering and is considered an art. Computer-aided drafting (CAD) uses computer software to create, modify, and analyze technical designs. CAD is used to animate movies and advertising.

Checking Your Knowledge:

1. Describe 10 forms of nonverbal communication.
2. Explain the notion of context in interpersonal communication.
3. What is the purpose of technical drawing?
4. Explain types of drafting that create precise images.
5. What is the major difference between CAD and other methods of technical drafting?

Expanding Your Knowledge:

Consider improvements you would like to make in your cell phone. Illustrate your ideas with drafting examples, using orthographic projection, pictorial drawing, a sketch, manual drawing, and computer-aided drafting. Here is an example of orthographic projection of an existing cellular telephone.



Web Links:

Interpersonal Communication
http://lmc.gatech.edu/~herrington/gcp/Ethnology/interpersonal_ethn.htm

Dale Carnegie's Secrets of Success
http://www.dalecarnegieonlinetraining.com/dale_carnegies_secrets_of_success/?keycode=DOT_Communication

Technical Drafting Jobs
http://www.ehow.com/list_6695022_technical-drafting-jobs.html

Free CAD Software
http://freecad.com/