

# UNIT 2

## Important Human Characteristics in Design

1. **Perception** - Perception is our awareness and understanding of the elements and objects of our environment through the physical sensation of our various senses, including sight, sound, smell, and so forth. Perception is influenced, in part, by experience.
  - **Proximity.** Our eyes and mind see objects as belonging together if they are near each other in space.
  - **Similarity.** Our eyes and mind see objects as belonging together if they share a common visual property, such as color, size, shape, brightness, or orientation.
  - **Matching patterns.** We respond similarly to the same shape in different sizes. The letters of the alphabet, for example, possess the same meaning, regardless of physical size.

## 2. Memory

- Memory is viewed as consisting of two components, long-term and short-term (or working) memory.
- Short-term, or working, memory receives information from either the senses or long-term memory, but usually cannot receive both at once, the senses being processed separately. Within short-term memory a limited amount of information processing takes place. Information stored within it is variously thought to last from 10 to 30 seconds, with the lower number being the most reasonable speculation. Knowledge, experience, and familiarity govern the size and complexity of the information that can be remembered.
- **Long-term** memory contains the knowledge we possess. Information received in short-term memory is transferred to it and encoded within it, a process we call learning. It is a complex process requiring some effort on our part. The learning process is improved if the information being transferred from short-term memory has structure and is meaningful and familiar. Learning is also improved through repetition. Unlike short-term memory, with its distinct limitations, long-term memory capacity is thought to be unlimited. An important memory consideration, with significant implications for interface design, is the difference in ability to recognize or recall words.

### 3. Sensory Storage

- Sensory storage is the buffer where the automatic processing of information collected from our senses takes place. It is an unconscious process, large, attentive to the environment, quick to detect changes, and constantly being replaced by newly gathered stimuli. In a sense, it acts like radar, constantly scanning the environment for things that are important to pass on to higher memory.
- Repeated and excessive stimulation can fatigue the sensory storage mechanism, making it less attentive and unable to distinguish what is important (called habituation). Avoid unnecessarily stressing it.
- Design the interface so that all aspects and elements serve a definite purpose. Eliminating interface noise will ensure that important things will be less likely to be missed.

## Human Interaction Speeds

- The speed at which people can perform using various communication methods has been studied by a number of researchers. The following, are summarized as table below-

### ❑ Reading

Prose text: 250–300 words per minute.

Proofreading text on paper: 200 words per minute.

Proofreading text on a monitor: 180 words per minute.

### ❑ Listening: 150–160 words per minute.

**Speaking to a computer:** 105 words per minute.

After recognition corrections: 25 words per minute.

### ❖ **Computer**

Transcription: 33 words per minute.

Composition: 19 words per minute.

### ❖ **Two finger typists**

Memorized text: 37 words per minute.

Copying text: 27 words per minute.

### ❖ **Hand printing**

Memorized text: 31 words per minute.

Copying text: 22 words per minute.

## Understand the Business Function

□ The general steps to be performed are:

- Perform a business definition and requirements analysis.
- Determine basic business functions.
- Describe current activities through task analysis.
- Develop a conceptual model of the system.
- Establish design standards or style guides.
- Establish system usability design goals.
- Define training and documentation needs.

