



UNIT-V

MEMORY AND FORGETTING

Definition

- ❖ *Memory is the cognitive system to acquire, store, retain, and later retrieve information*
- ❖ *Memory is the process of maintaining information over time*
- ❖ *Memory is involved in processing vast amounts of information. This information takes many different forms, e.g. images, sounds or meaning*

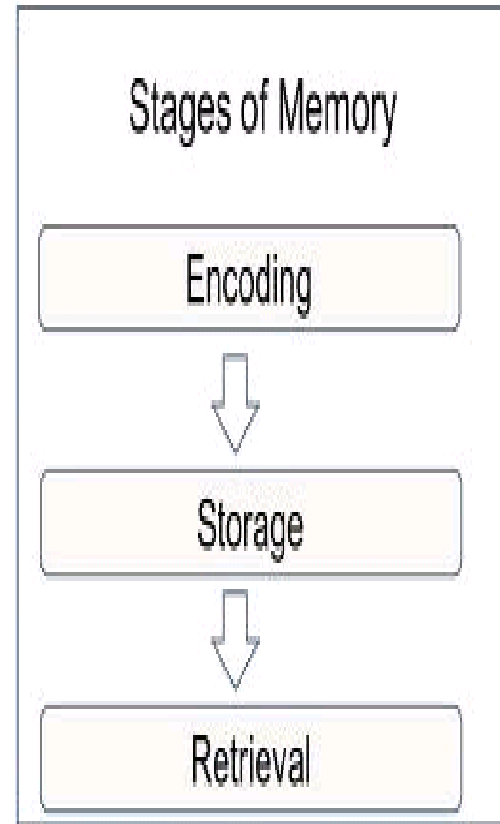
Stages /Process of Memory

Three distinct processes of memory have been identified:

➤ **Encoding:** *It is the process of receiving sensory input and transforming the information into a form or code, and which that information can be stored*

➤ **Storage:** *It is the process of actually putting coded information into memory and the information can be stored over a period of time*

➤ **Retrieval(recall or recognition):** *It is the process of gaining access to the stored or coded information when needed*



Types of Memory

- **Short-Term Memory (STM):** STM is a memory that holds information received from the sensory register for up to about 30 seconds. Short-term memory is also known as “working memory”. Although, the length of the retention depends on a number of factors. Such as:
 - ❖ **Serial Position Effect: Primacy Effect and the Recency Effect**
- **Long-Term Memory (LTM):** LTM holds a vast quantity of information which can be stored for a longer period of time. The information stored is diverse and wide-ranging and includes all of our personal memories, our general knowledge and our beliefs about the world. LTM contains words, sentences, ideas, concepts, and life experiences we have had.
- ❖ LTM is not a passive store of information, but a dynamic system which constantly revises and modifies stored knowledge in the light of new information. LTM is a much larger, more complex memory system than STM and it is not so easy to characterize in terms of factors like capacity, duration and simple encoding

- LTM has two different stores as:

- ❖ **Semantic Memory:** This contains the meanings of words and concepts and the rules for using them in language. It is a vast network of meaningfully organized items of information
- ❖ **Episodic Memory:** This contains memories of specific things or events that have happened to a person
- **Sensory Memory:** Sensory memory allows individuals to retain impressions of sensory information after the original stimulus has ceased. The role of sensory memory is to provide a detailed representation of our entire sensory experience for which relevant pieces of information are extracted by short-term memory and processed by working memory Two other types of sensory memory are:
 - ❖ **Echoic Memory:** It is the auditory sensory store. It is the sensory memory register specific to auditory information (sounds). It lasts for no more than 3-4 seconds
 - ❖ **Iconic Memory:** It is the visual sensory store. It is also known as picture or photographic memory. This refers to the short term visual memories people store when seeing something very briefly. It lasts just for few seconds

➤ **Metamemory:** Metamemory defines the ability to monitor one's own memory. It is the knowledge and awareness of one's own memory, including the contents and processes of our own memory. What do you remember and how confident are you in the accuracy of your memories. Metamemory also includes the strategies we use to help us remember something

❖ For example, you may realize that you've forgotten the date of a friend's birthday, but you're 90% sure it's in July. So, if you're reminded that your friend's birthday is on July 8th, you may make a mental note of the date and the fact that 8 follows 7 to help you remember next time

FORGETTING

- *Forgetting is the inability to remember any information*
- *“It is the apparent loss of information already encoded and stored in long-term memory(LTM)”*
- ✓ *Forgetting occurs;*
 - *when we do not “rehearse” the encoded and stored information*
 - *when old memories are replaced by the new ones*
 - *there is difficulty to remember any information from the memory due to environmental or psychological factors*

Amnesia

Amnesia is a memory disorder. It is the loss of long-term memory that occurs as a result of brain damage (physical injury, neurological disorder, seizure or stroke or PTSD)

Amnesia is of two types:

- ❖ ***Anterograde Amnesia:** It is the loss of the ability to create new memories after the event that caused amnesia. Thus, leading to a partial or complete inability to recall the recent past, while long-term memories from before the event remain intact.*
- *It is the impaired capacity for new learning*
- ❖ ***Retrograde Amnesia:** It is the loss of information that was acquired before the onset of amnesia*

Theories of Forgetting

Interference Theory of Forgetting

This theory states that interference occurs when information that is similar in format gets in the way of information that someone is trying to recall

There are two types of interference:

- ❖ ***Retroactive Interference:*** *When more recent information gets in the way of trying to recall the older information*
- ❖ ***Proactive Interference:*** *It is the reverse of retroactive interference. This occurs when old information prevents the recall of new information*

Decay Theory of Forgetting

Decay theory states that when something new is learned, “memory trace” is formed in the brain and over time this trace tends to “disintegrate”, unless it is occasionally used

According to decay theory, short-term memory can retain information for a limited period of time, unless it is rehearsed. If it is not rehearsed, the information gradually fades or decay

- ✓ *Therefore, forgetting occurs as a result of automatic decay of the memory trace in the brain*