

MEMORY CHAPTER

* MEMORY:- The process by which we encode, store and retrieve information.

OR

- An active system that receives information from the senses, puts that information into a usable form, & organizes it as it stores it away, and then retrieves the information from storage.

* MEMORY PROCESS:-



- ENCODING: Refers to the way information is first represented in a memory system.
- Processing information into memory is called encoding.

Examples:- If you meet someone for the first time at a party, you need to encode her name (Uzma) while you associate her name with her face.

- If someone asks you what you ate for lunch today, more than likely you could recall this information quite easily.
- The process of hearing a sound that has been spoken out loud & writing it down.
- Looking at a traffic light & encoding whether it is a red or green light, instead of focusing on trees or plants surrounding the car.

• STORAGE:

- The second compartment of memory is storage which involves the "warehousing" of the information that has been acquired.
- Storage is the maintenance of encoded information ~~is~~ ~~there~~ over time. After encoding the information in mind, the information is then saved in such a way, that it would not be lost.
- Therefore, we can say that storage process is the process in which we store our information that we have encoded in the first step of memory.

Example: How do you remember a telephone number you have looked up in the phone book?

If you can see it, then you are using visual coding, but if you are repeating it to yourself, you are using acoustic coding (by sound).

- RETRIEVAL: It is the process of getting information out of memory.
- It is the ability to access information when you need it.

Example: If you are trying to remember the name of a person you met at a party, you will need to retrieve that information from your memory.

⇒ Automatic & effortful:- E.g.:

- When asked your father's name, retrieval is automatic, but when asked the name of your first grade teacher, retrieval is more effortful.

RETRIVAL CUES:- It is a prompt that help us remember.

CUE \Rightarrow Objects or events that help trigger an action or a memory of that action.

- Stimuli that help people retrieve memories.
- Retrieval cues can be present in the external environment, such as sounds, smell, & sights. (Context dependant) E.g. Room used for the study.
- It can also be internal to the person retrieving the memory, such as physical states or feelings. (state dependant) E.g. Such as use of substances or mood

* THREE TYPES OF RETRIEVAL:-

- There are three ways you can retrieve information out of your long-term memory storage system.
- 1) Recall:- is what we most often think about when we talk about memory retrieval: it means you can access information without cues.

E.g: You would use recall for an essay test.

E.g: Examination hall is the best example of recalling the past data.

E.g: Recalling the name of a person.

E.g: Answering to a question.

2) Recognition:- It is identifying something you learned previously & is therefore stored in some manner in memory.

OR

- A feeling of familiarity for a previously-encountered stimulus.

E.g: When an individual encounters a person they know they have met before but cannot recall their name.

(you recognize the correct answer out of a group of available answers)
E.g: Multiple choice questions, True/False, Yes/No etc.

E.g: Recognizing a familiar face without being able to recall the person's name.

3) Relearning/Relearning:- (occurs once the mind is exposed to the information again).

- Learning information that you previously learned.
- It measures how much faster someone can learn material that has been previously learned & then forgotten.

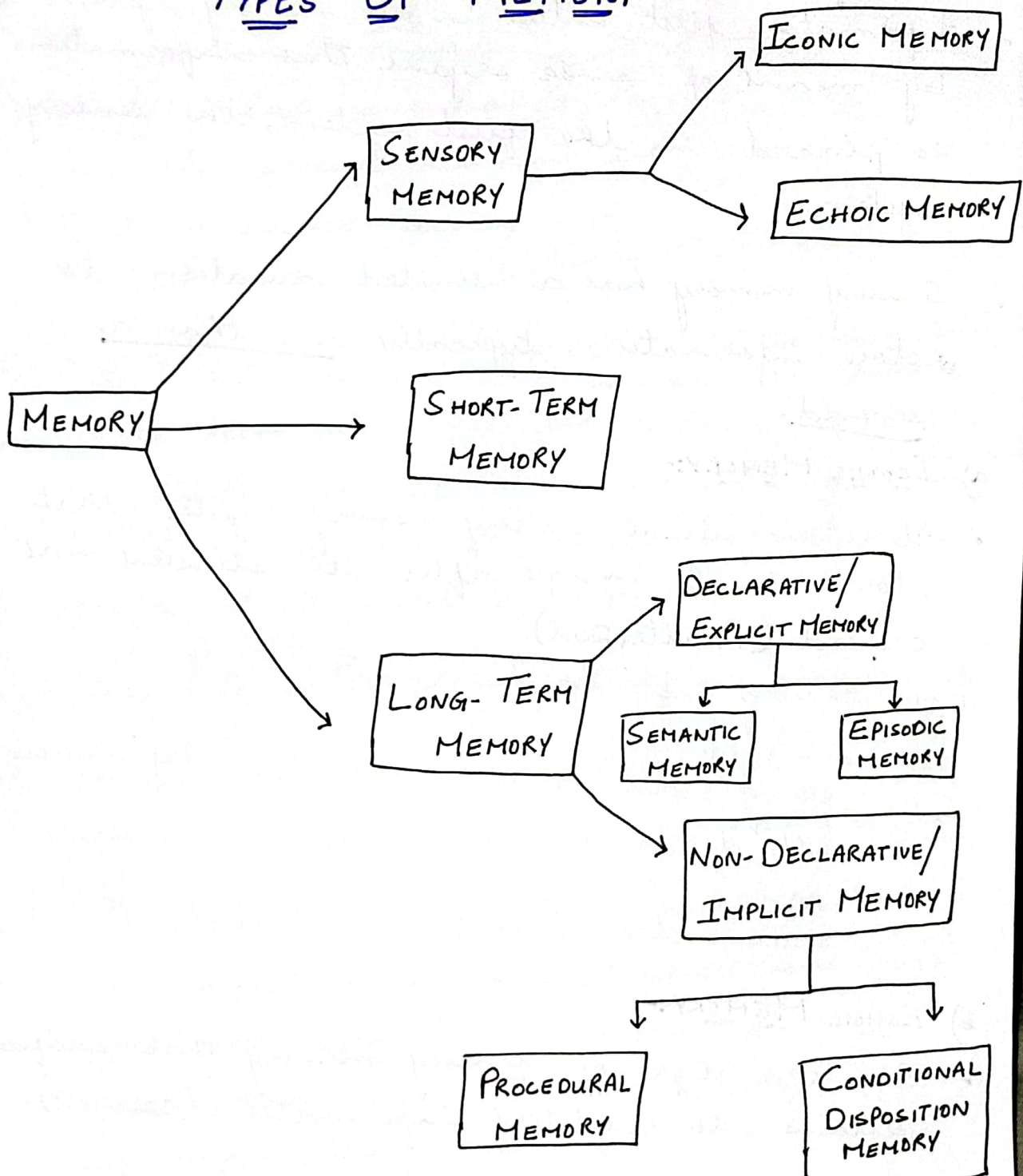
E.g: People can quickly regain their ability to ride a bike or play a musical instrument after not practicing for an extended period.

E.g: Memory of algebra

E.g: It took you ten hours to memorize the entire speech. At the end of the school year, you had to relearn the material. But this time, you were able to recite the speech flawlessly after only five hours of studying.

is would give you a savings of 50%, as it only took you half the time to release the material.

"TYPES OF MEMORY"



1) SENSORY MEMORY:-

- The initial recording of sensory information in the memory system is called sensory memory.
- Information first enters in our memory system by means of sense organs. This information is placed in the first system, the sensory system.
- Sensory memory has a limited duration to store information, typically less than a second.

a) ICONIC MEMORY:-

- It is the visual sensory memory register that stores visual images after its stimulus has ceased (Pratter, 2018).

E.g: seeing an ant on the wall.

E.g: seeing an aircraft in the sky as you walk down the road.

E.g: seeing the change in traffic lights.

b) ECHOIC MEMORY:-

- It is a type of sensory memory that specifically pertains to auditory information (sounds).
- It refers to the brief retention of sounds in our memory after the original noise has ceased.
- This short-term auditory memory, which can last several seconds, allows the brain to process & comprehend sounds & spoken language.

... after the sound is no longer present.
E.g: Hearing the bark of a dog.

E.g: Hearing the whistle of a police officer.

E.g: Hearing the roar of a car.

Activity: Clap your hands together once & see how the sound remains for a brief time & then fades away.

2) SHORT-TERM MEMORY:- (STM) (lasts upto 30 seconds & longer than 30 seconds if rehearsed)

- Short-term memory is the capacity to store a small amount of information in the mind and keep it readily available for a short period of time.
- Also known as primary or active memory.
- The amount of information that can be stored in short-term memory can vary.
- In 1956, in an influential paper titled "The Magical Number Seven, Plus or Minus Two," psychologist George Miller suggested that people can store 7 ± 2 items in short-term memory.
- More recent research suggests that people are capable of storing approximately four chunks or pieces of information in short-term memory.

- CHUNK: A group of familiar stimuli stored as a single unit in short-term memory.
E.g: A chunk can be a group of seven individual letters or numbers, permitting us to hold a seven-digit phone number (such as 226-4610) in short-term memory.

E.g: Imagine that you are trying to remember a phone number. The other person rattles off the 10-digit phone number, & you make a quick mental note. Moments later you realize that you have already forgotten the number. Without rehearsing or continuing to repeat the number until it is committed to memory, the information is quickly lost from short-term memory.

E.g: Taking notes, E.g: Reading a book, E.g: Listening to Lecture,
E.g: Playing games

3) LONG-TERM MEMORY:

- The relatively permanent and limitless storehouse of the memory system is called long term memory.
- LTM is memory that can last as little as a few days or as long as decades.
- LTM consists of memories that the brain has stored over an extended period of time.
- It can hold an unlimited amount of information for an indefinite period of time.

E.g: Recalling a Poem

E.g: Identifying a song from a few notes & remembering its lyrics.

E.g: Important life events (memory, death etc)

E.g: The memory of how to ride a bike.

E.g: Remembering where we went on vacation the past summer.

* TYPES OF LONG-TERM MEMORY:-

1) EXPLICIT / DECLARATIVE MEMORY: (with conscious recall).

- It is a type of memory that requires conscious thought.
- This memory is recall of realistic information such as dates, words, faces, events & concepts.

For example; Remembering the capital of France, the rules for playing football and what happened in the last game of the World Series involves declarative memory.

E.g: Recalling specific details about an academic lecture you attended last week. This involves the conscious recollection of factual information & events.

- Declarative memory is usually considered to be explicit & it involves conscious, intentional remembering.

* TWO TYPES:-

- a) Semantic Memory
- b) Episodic Memory

a) Semantic Memory:

- It is a type of explicit memory.
- It refers to our general world knowledge that we have accumulated throughout our lives (Tulving, 1973).
- It consists of your entire knowledge base including your vocabulary, concepts & ideas.
- It is an organized record of facts, concepts & skills that we have acquired.

E.g: Vocabulary.

E.g: Conceptual knowledge.

E.g: Facts (like "Paris is the capital of France").

E.g: Earth revolves around the sun.

E.g: Sun rises in the East & sets in the west.

E.g: Humans are mammals.

b) Episodic Memory:

- It refers to our ability to recall personal experiences from our past.
- This aspect of memory organizes information around episodes in our lives.

E.g: Remembering your first day at school.

E.g: What we ate for breakfast.

E.g: What happened during our childhood.

E.g: A movie we saw last week.

IMPLICIT / NON-DECLARATIVE :- (without conscious recall)

It refers to information that is remembered unconsciously & without effort.

E.g. Your ability to ride a bicycle even if you haven't done it for years.

- This memory deals with learned skills that occur without conscious awareness (Gabrieli, 1998).

E.g: Typing

E.g: Brushing teeth

E.g: Dressing everyday

E.g: Singing a familiar song.

E.g: Cooking, walking, talking, driving

* TWO TYPES:-

a) PROCEDURAL

b) CONDITIONAL DISPOSITION

a) Procedural Memory:-

- It refers to knowledge about how to do things. Refers to motor skills & habits that are automatic & learned through repetition.

- Tasks that require a procedure, or "how to"

- It is the memory for skilled actions.

E.g: How to brush your teeth. } step-by-step

E.g: How to drive a car.

E.g: How to swim

b) CONDITIONING:

- When you unconsciously learn to associate one thing with another.
- Classical conditioning effect, in which we learn, often without effort or awareness, to associate neutral stimuli (such as a sound or a light) with another stimulus (such as food), which creates a naturally occurring response, such as enjoyment or salivation.

E.g: Whenever you come home wearing a baseball cap, you take your child to the park to play. So, whenever your child sees you come home with a baseball cap, he is excited $\frac{1}{2}$ he has associated your baseball cap with a trip to the park.

E.g: Paulon's dog

E.g: A harsh & strict teacher (UC) makes students feel bad (UR). Students associate going to school (CS) with the harsh teacher & learn to feel bad about going to school (CR).

E.g: Food aversion; Food (UC) \rightarrow gets sick, feeling awful / bad (UR) \rightarrow Food's appearance, smell, or taste (CS) \rightarrow evoke an intense dislike / fear in the person (CR).