

We have the power to remember anything we want!

Chapter 2 - Memory

Memory is the ability to understand, store and recall information – all learning depends on memory.

A lot of research has been carried out over the centuries on memory: how it works both from a psychological and philosophical point of view. The research is still on-going and today all the complexities of the workings of memory are not answered and have to be explored and researched further.

70% of what we learn in a day is gone in 24hrs.....unless we intend to remember it and practise it!

There are 3 primary steps in remembering:

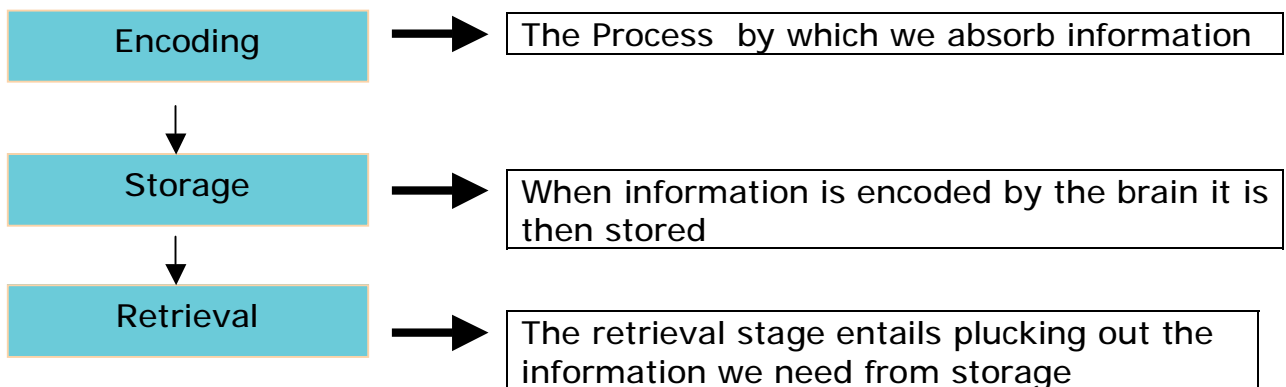


Fig.1 Three Stages of Memory processing.

Memory can be broken down into three distinct types:

Immediate Memory: Information from the world is transmitted through our senses (eyes, ears, touch) to the brain and is registered briefly without our awareness. The purpose of our Immediate Memory is to hold a sensory image long enough so that if it needs to be placed into storage it will be, e.g. remembering a phone number that is called out to us.

Short Term Memory: This type of memory differs from Immediate Memory in that it allows us to remember several things at once (not just one). It allows us to recall something from several seconds to as long as a minute without rehearsal. However, its capacity is very limited and can only hold approximately 7 items of information at any one time. If information is not rehearsed, or visualised immediately, it will be forgotten within 30 seconds. Short term memory is often referred to as working memory.

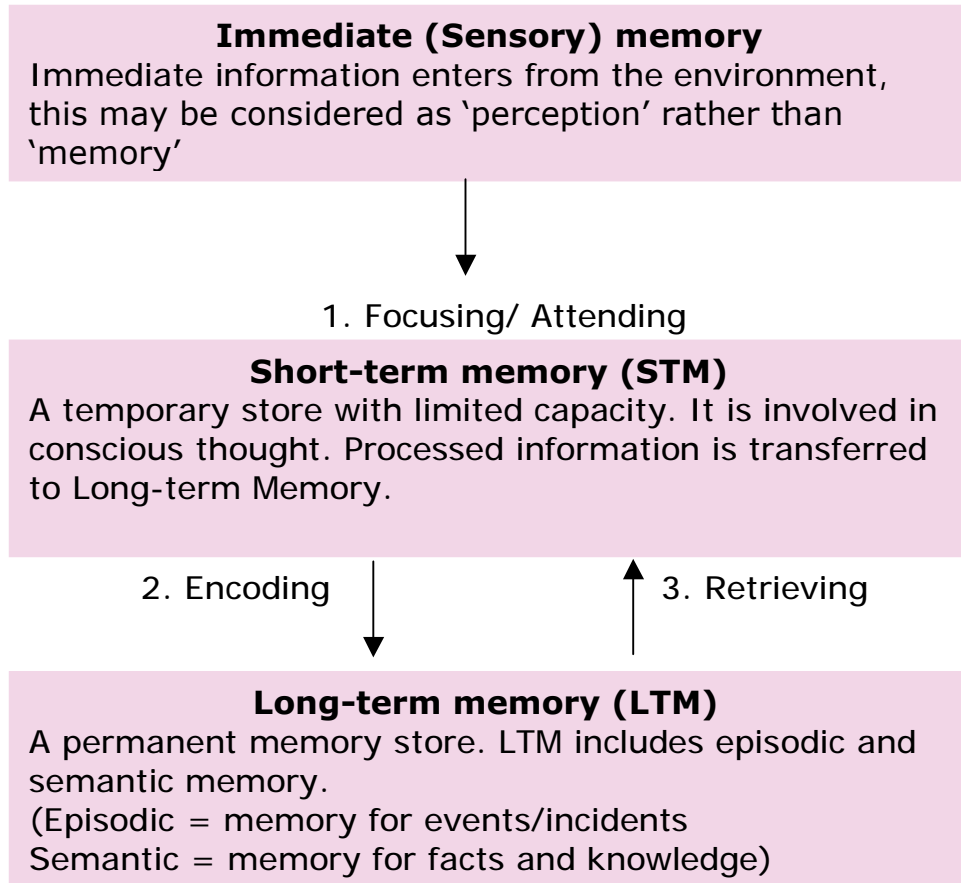
Long Term Memory: This memory can store much larger quantities of information for a potentially unlimited duration (sometimes a whole life span). Our Long Term memory allows us to recall large quantities of information from our past. The more we use a particular memory the easier and quicker it is accessed.

Memory is like a muscle the more you use it the stronger it gets!

It is apparent that organisation during the initial storing period will enhance retrieval at a later stage. Organisation and association are key components to improving your long-term memory. LTM is not limited to the number of items it can retain. No one can exceed the limits of long-term memory because it is limitless.

Summary of the stages of memory

Fig. A model of memory



Tips to help improve memory

If you think you have a poor memory, you may just have some less-than-effective habits for taking in and processing information.

Pay attention.



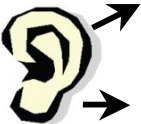
You can't remember something if you have never learned it, and you can't learn something (encode it into your brain) if you don't pay enough attention to it. It takes about eight seconds of intent focus to process a piece of information.


Tips for paying attention:

1. Try to focus on one task at a time
2. Try to work in an environment that is not distracting
3. Keep study/reading periods to short sessions
4. Use a highlighter to focus on key points

Tailor your study to your learning style.

- Visual  → Seeing
→ Reading

- Auditory  → Listening
→ Speaking

- Kinaesthetic  → Touching
→ Doing

Involve as many senses as possible. Even if you're a visual learner, read out loud what you want to remember. Try to relate information to colours, textures, smells and tastes. The physical act of rewriting or typing information can help imprint it onto your brain. Use as many learning channels as possible.



Study Skills Manual

Relate information to what you already know.

Connect new data to information you already remember, i.e. build on information

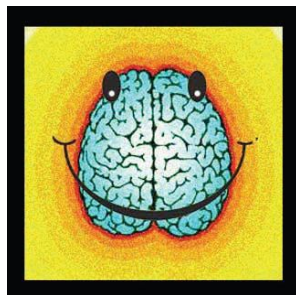


Rehearse information frequently and “overlearn.”

Review what you’ve learned the same day you learn it, and review it at intervals thereafter. What researchers call “spaced rehearsal” is more effective than “cramming.”

Be motivated and keep a positive attitude.

Tell yourself that you want to learn, what you need to remember and you can learn and remember it. Telling yourself you have a bad memory actually hampers the ability of your brain to remember, while positive mental feedback sets up an expectation of success.



Use Mnemonic devices to help you remember.

Mnemonics are clues that help us remember something, usually by causing us to associate the information we want to remember with a visual image, a sentence, or a word. Mnemonic devices are a great way of helping **break down** and **remember** hard topics. Using Mnemonics and your imagination help you remember things easier.

Common types of **mnemonic devices** include:

- **Visual images:** Use positive, pleasant images, because the brain often blocks out unpleasant ones. Make the images vivid, colourful, and three-dimensional — they'll be easier to remember.
- **Acronyms** is a memory technique where the first letter of each word is part of or represents an initial of what you want to remember.



Example: Colours of the rainbow.

RED
ORANGE
YELLOW
GREEN
BLUE
INDIGO
VIOLET

Richard Of York Gave Battle In Vain

- **Rhymes and alliteration:** Do you remember learning “30 days hath September, April, June, and November”? Using simple rhymes such as this one can help you remember difficult or confusing information.
- **“Chunking” information:** This technique involves arranging a long list in smaller units or categories that are easier to remember, e.g. a long telephone number- break it down in to more manageable chunks -08954321 → 089 543 21

Remember,
always
adapt the
information
you are
learning to
suit your
learning
style !

Exercise your Brain!!




The more we use
our brain the more
it grows

Our brain, like every other part of our body, needs to have exercise. The more we use or work out our brain, the quicker and better it becomes.

It is very easy to stimulate our brain. Doing simple things like changing our daily routine can help stimulate areas of the brain that are not normally used.

For example, brushing your teeth with your non-dominant hand can activate neuronal connections on the non-dominant side of your brain. This is the most effective way to keep your synapses firing. Challenge your mind by engaging in activities that you would not normally do.

A collection of decorative colored shapes: a green circle, a blue oval, a purple oval, a red circle, and a yellow circle.

Juggling three or more balls at the one time is another great way of exercising both sides of your brain.

In relation to remembering, instead of trying to cram as much information into your head the night before your exam, learn in small chunks through as many learning channels as you can. Breaking an essay into a series of images and recording the essay on to an audio tape stimulates a number of different areas in the brain and increases the likelihood of the information being remembered.



A Healthy Body, a Healthy Mind!

When we are tired or feeling unwell it is a lot harder for us to remember information. Treating our bodies well can help enhance our ability to process and remember information.

Regular Exercise → Increases oxygen to our brain.

Managing Stress → Cortisol, the stress hormone, can be harmful to memory if it is not relieved. Taking regular breaks and engaging in fun activities can help you control the cortisol levels in your body and hence help you learn.

Get plenty of sleep → Sleep is necessary for memory consolidation. When we don't get enough sleep it is very difficult to concentrate.

Diet → You probably know already that a diet based on fruits, vegetables, whole grains, and "healthy" fats will provide lots of health benefits, but such a diet can also improve memory. B vitamins, especially B6, B12 and folic acid, play an important role in helping to protect neurons. They can be found in foods such as Spinach and most dark green leafy vegetables. Omega-3 fatty acids are found in large amounts in the brain and are associated with cognitive function. These particular acids have been found to play an important role in concentration. The best sources of Omega-3 fatty acids are cold-water fish, flax seeds and walnuts.

Elephants Never Forget!



Memory test – quiz

Test your memory with this short easy quiz.

Our memory can be impaired by a number of different reasons such as stress, fatigue, illness and lack of sleep.

1. I forget where I leave my keys:

- Always
- Sometimes
- Never

2. I forget whether I have locked the front door:

- Always
- Sometimes
- Never

3. I find it difficult to remember the name of a person I was just introduced to:

- Always
- Sometimes
- Never

4. I often forget appointments I have made (i.e. Doctor or Dental):

- Always
- Sometimes
- Never

5. I often forget to turn on the security alarm before I leave the house:

- Always
- Sometimes
- Never

6. After reading a lot of information I find it hard to remember the information I read in the beginning:

- Always
- Sometimes
- Never



Elephants Never Forget!

- Memory test –Quiz Answers

Give a tick in the box for each of your answers.

Always	Sometimes	Never

If you answered mostly 'Always or Sometimes' you may have difficulty with your memory.

If you answered 'Never' you find remembering different events, places or objects comes easily to you.

Tips for remembering:

Places → Take your time absorbing your environment. Try finding a distinctive aspect of the environment that will help you remember.

Numbers → If you have difficulty remembering numbers, especially a long sequence of numbers like a telephone number, break the sequence into a series of small manageable chunks.

Names → If you find it difficult to retain names, ask the individual to repeat their name or even write it down. Sometimes visualising the name can help you remember it. Associating the individual's name with a well known object can also help you recall the name. For example, you could visualise a rose for the name Rosie.

Where you put things → If you are constantly losing your keys etc., find a logical place like a bowl on the hall table to place your keys or glasses. When you are finished using the object always return it to its rightful place. Organising yourself can help you remember where you have left things.

Activity



Memory Span.

Our Memory Span refers to the number of items (words or numbers, for example) that an individual can hold and remember. The amount of items that we can hold in our memory is often seen as a measure of our working or short-term memory. Improve your memory span by practising the amount of items that you can retain and recall.

Look at the items listed below for 2 minutes:

Line 1



Clock



Frog



Flower



Cup

Line 2



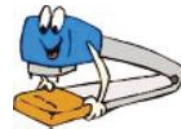
Sun



Scissors



Truck



Stapler



Banana

Line 3



Ladybird



Screw driver



Elephant



Ball

Now test your Memory Span by trying to name or draw an image of each of the items, in the order in which they appeared, without looking back.

Take it slowly, and move from line 1 to line 3. After you have completed this task look back and see how many you got right. Improve your memory span by practising and trying to complete each of the lines correctly without looking back.

Line 1 _____

Line 2 _____

Line 3 _____

Brain Teaser



Jane, Marion, and James were in a spelling competition. Here are their results:

1. The youngest person in the group received the least points.
2. Marion got half of the points of the eldest person in the group.
3. James received as many points as both others combined.



Question:

Who is the eldest in the group?

The Brain Exercise:

This puzzle requires you to use your planning and reasoning skills. From reading the statement above you must develop a plan to solve the problem using your reasoning skills. These skills are found predominantly in your prefrontal cortex. This area of your brain is responsible for executive functions such as planning, structuring, and evaluating voluntary, goal-directed behaviour. Our executive functions help us to work towards a defined goal and assess the actions of achieving that goal as we go along.

Answer:



Solution:

Start with statement #2 which tells us that Marion is not the eldest. So the eldest must be either Jane or James.

Statement #3 tells us that James received the sum of the other two people's points, and those point totals are not equal, per statement #1 (the youngest has less points than the other two).

For James to be the eldest, Marion and James would each have half of the points that Jean has, but we know they can't have the same amount of points.

Therefore, James must have the most points, and Marion must be the youngest, but Jane is the eldest.