AJMAL
NAZIR AJMAL MEMORIAL
COLLEGE OF EDUCATION, HOJAI
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memory

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MEMORY

The term memory comes from the Latin word “memoria”, meaning “to remember.” In psychology, memory refers to the mental ability to store, retain, and recall past experiences, knowledge, and skills when required.

“Memory is the process of retaining and reproducing past experiences.”

Munn

“Memory is the mental activity concerned with the retention and recall of past experiences.”

Woodworth

Memory is the means by which we draw on our past experiences in order to use this information in the present.

Stenberg

In simple terms, memory is the power of the mind that enables a person to remember experiences, ideas, and learned information for future use.

NATURE OF MEMORY

A Mental Process

Memory is an internal cognitive activity involving storing and recalling information.

Active and Constructive:

Memory does not record events exactly; it reconstructs them based on understanding and interpretation.

Operates Through Three Stages-

Encoding (learning)
Storage (retention)
Retrieval (recall/recognition)

Influenced by Emotions and Interest

Strong emotions and interest improve memory; boredom and anxiety weaken it.

Shows Individual Differences

Memory varies with intelligence, attention, motivation, and emotional stability.

Closely Linked to Learning

Learning is incomplete without memory; both processes support each other.

Selective in Nature

Memory does not store everything; it focuses on meaningful and relevant information.

Dynamic and Flexible

Memory changes with new experiences, practice, and understanding.

Dependent on Attention

Effective memory requires focused attention during learning.

Can Be Improved with Practice

Memory is trainable; repetition, association, visualization, mnemonics, and meaningful learning strengthen it.

TYPES OF MEMORY

Sensory Memory

Sensory memory is the first and shortest stage of memory. It stores information received through the senses for a very brief period - usually less than one second. Its purpose is to hold sensory impressions long enough for the brain to process them.

Examples:
Seeing a flash of lightning, hearing a sound for a moment, or briefly retaining the shape of an object after closing your eyes.

Short-Term Memory (STM)

Short-term memory holds information for a limited duration (15-30 seconds) and has a limited capacity (approximately 7 ± 2 items).
It is called working memory because it is actively used for immediate tasks such as comprehension, solving problems, or following instructions.

Examples:
Remembering a phone number temporarily, doing mental math, or recalling a sentence long enough to write it down.

Long-term memory (LTM)

It has the unlimited capacity to store information for days, months, years and even a lifetime.

It is also referred as Permanent memory.

Long-term memory can be categorized into

- Declarative memory-information about things is stored.
- Procedural memory-information regarding how to do things is stored in procedural memory.

Declarative memory can be further subdivided:

Episodic memory (events & episodes)

Semantic memory (general knowledge)

Strategies to develop Memory

- Developing mnemonic devices for remembering new information.
- Doing brain teasers and challenging puzzles.
- Doing cardiovascular exercise to promote brain health.
- Focus Your Attention, Pay Extra Attention to Difficult Information
- Avoid Cramming
- Structure and Organize
- Elaborate and Rehearse, Practice by writing things
- Visualize Concepts
- Relate New Information to Things You Already Know
- Read Out Loud
- Get Some Sleep
- Vary Your Study Routine

Techniques of Effective Memorization

- Will to Learn: Have the intention to learn. We should read or observe something with a definite intention of recalling it later on, our memory of it will be strong. Where there is a will, there is way. Materials read, heard or seen without an intention or mood are difficult to be remembered at later times.
- Interest and Attention: Interest and close attention are essential for effective learning and memorization. Give close attention to the things to be learnt. We cannot understand unless we attend closely to what is presented. According to Mr. Bhatia, "Interest is the mother of attention and attention is the mother of memory; if you would secure memory, you must first catch the mother and the grandmother."
- Picturing the Situation: Make a picture of the situation to be remembered. Visual aids facilitate acquisition of visual images.
- Follow Principle of Association: Leaners should not learn things in water tight compartments. Attempt should be made to connect it with one's previous learning and so many related things. We can use chunking to remember the large information in the form of small chunks. VIBGYOR is an example of chunking to remember seven colors. 'Pandit Badri Prasad Har Har Bole' is a good chunking to remember all the trigonometric ratios in mathematics. We should form diverse and multiple associations with every fact we want to retain.
- Grouping and Rhythms: Grouping and rhymes also facilitate learning and help in remembering. For example, a mobile number 9878742491 can be easily memorized and recalled if we try to group it as 98787-42491.

- Distribute Learning as much as Possible: We should not cram. We should distribute learning over days or weeks. It will help us to retain better.
- Utilize as Many Senses as Possible: Senses are the gateways of knowledge. Things are better learnt and remembered when presented through more than one senses. Take the help of A-V aids.
- Arranging Better Learning Situations: Environmental factors affect the learning process. Care should be taken to arrange better learning situations and congenial environment. A quiet and calm atmosphere and stimulating environment proves an effective aid to learning.
- Repetition and Practice: An intelligent repetition with full understanding, always helps in making the learning effective and enduring. The things repeated and practiced frequently are remembered for a long time. Due care should be taken for drill work, practice and review etc.
- Role of Recitation: It ensures active participation on the part of the learner.
- Provision of Change and Rest: There should be a proper provision of rest and change of work. It helps in removing fatigue and monotony. Have rest or sleep after study. After learning, there should be a pause. Rest consolidates the learnt subject matter. A fresh mind is necessarily able to learn more and retain for a long time than a tired and dull one.
- Learn as a Whole: To learn a long chapter, we should view it as a whole before beginning intensive study of its parts.

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FORGETTING

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Forgetting is the failure to retain or recall previously learned information. It is the inability to retrieve stored data from memory when needed. Forgetting is a natural and universal process; everyone forgets some information over time.

“Forgetting is the loss of the ability to recall or recognize something learned or experienced earlier.

Ebbinghaus

“Forgetting is the loss, permanent or temporary, of the ability to recall or recognize something learned earlier.”

Munn

Nature of Forgetting

1. Natural Process

Forgetting is natural and unavoidable. No one can remember everything learned, as the brain selectively retains what is useful.

2. Gradual Process

According to Ebbinghaus's Forgetting Curve, most forgetting occurs soon after learning, and then the rate slows down over time.

3. Selective Process

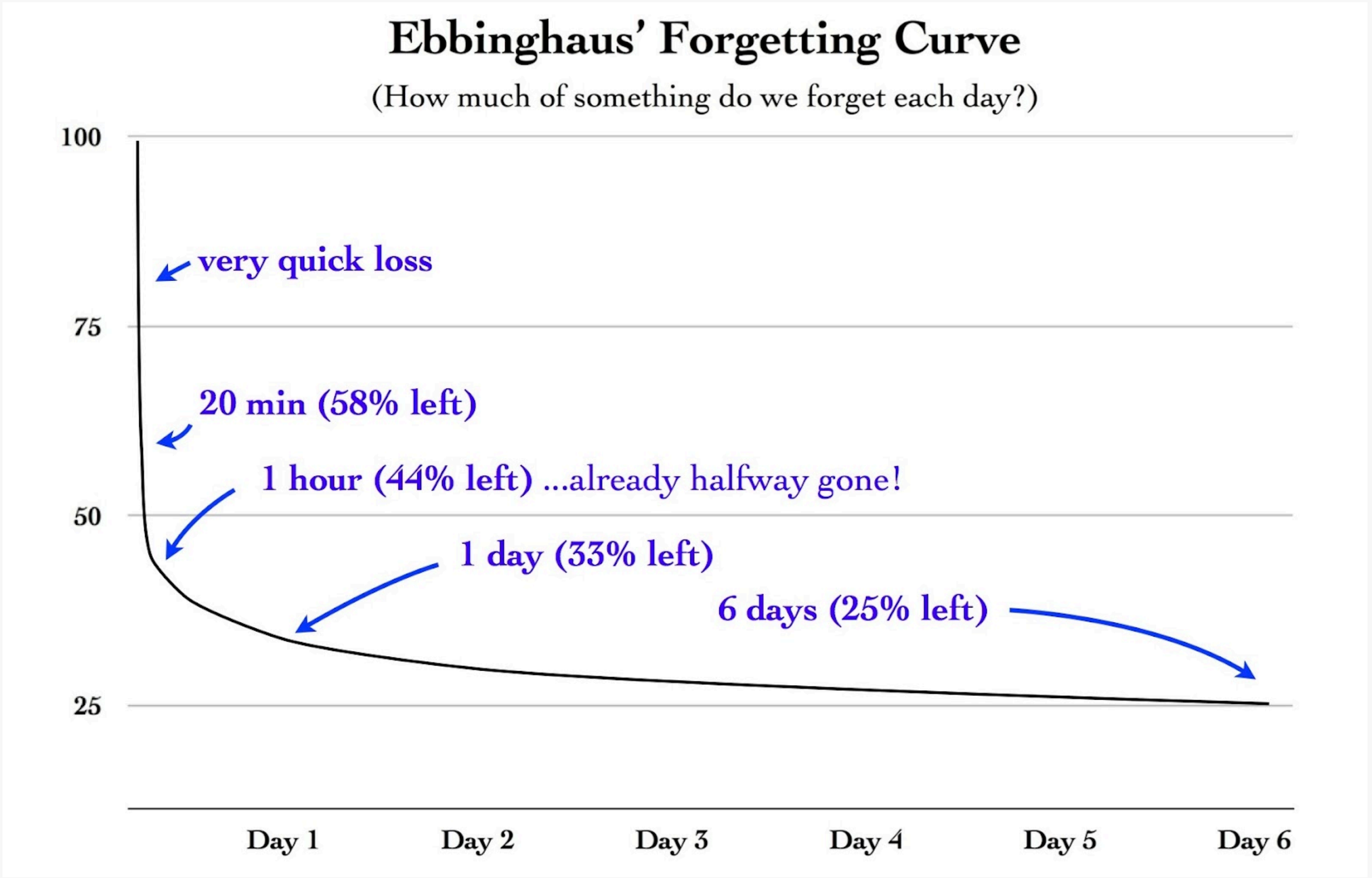
Not all information is forgotten equally - the brain forgets irrelevant or less meaningful data faster.

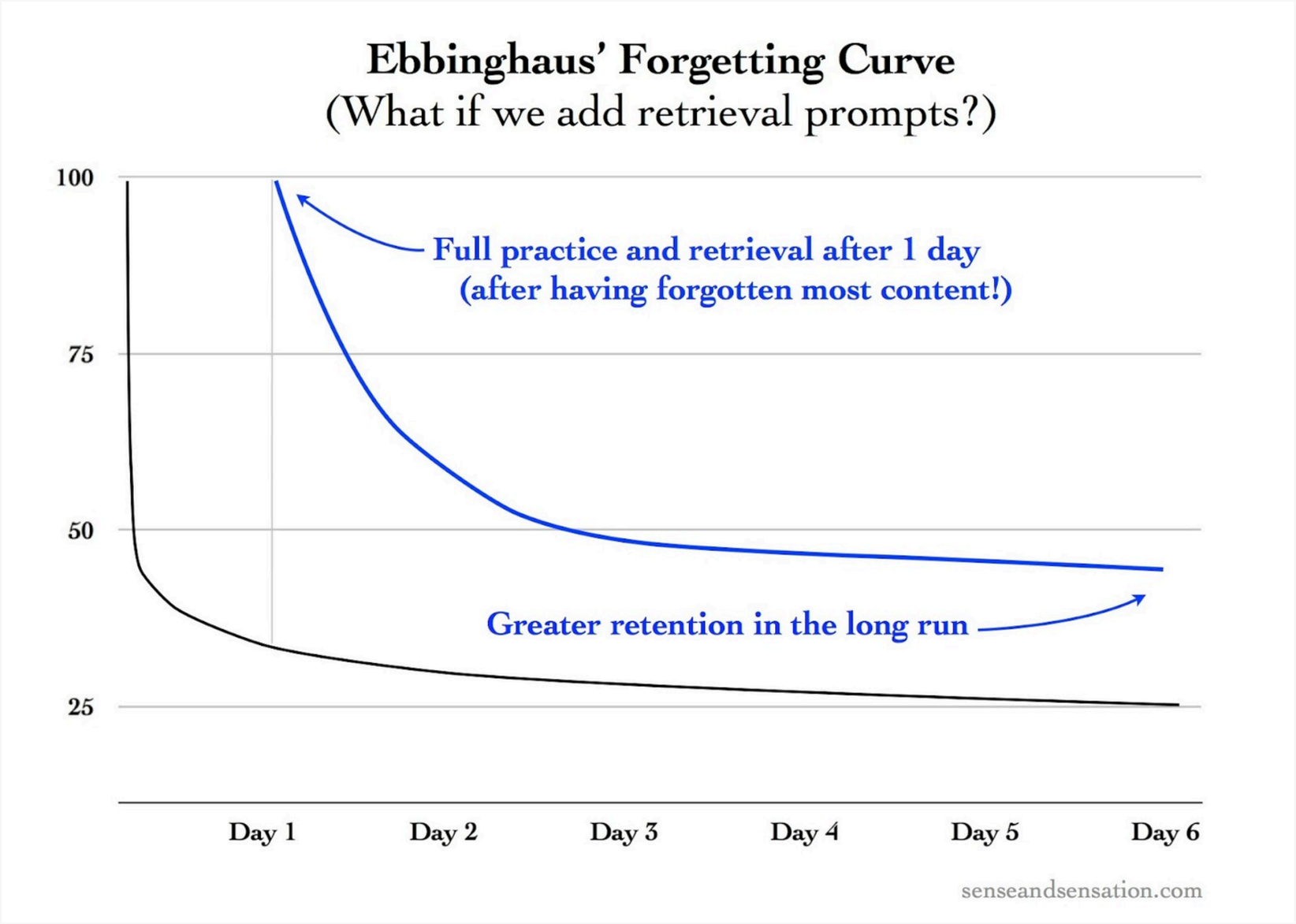
4. Both Beneficial and Harmful

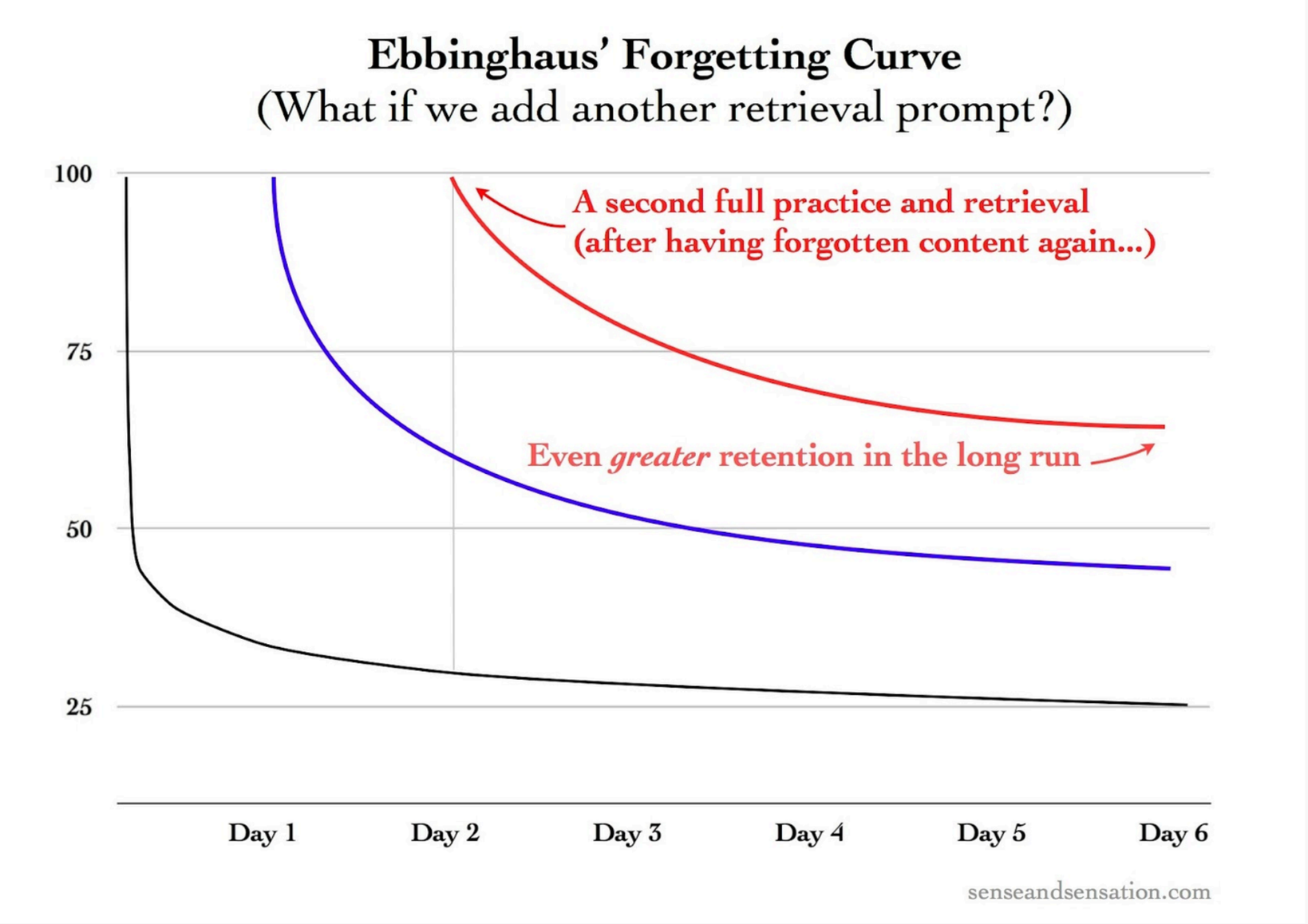
Forgetting unnecessary details helps reduce mental overload, but forgetting essential information can hinder learning.

5. Related to Memory Strength

Strong, meaningful, and emotional memories last longer; weak or mechanical memories fade quickly.


Ebbinghaus' Forgetting Curve
(How much of something do we forget each day?)
100
75
50
25
very quick loss
20 min (58% left)
1 hour (44% left) ...already halfway gone!
1 day (33% left)
6 days (25% left)
Day 1
Day 2
Day 3
Day 4
Day 5
Day 6


Ebbinghaus' Forgetting Curve
(What if we add retrieval prompts?)
100
75
50
25
Full practice and retrieval after 1 day
(after having forgotten most content!)
Greater retention in the long run
Day 1
Day 2
Day 3
Day 4
Day 5
Day 6
senseandsensation.com


Ebbinghaus' Forgetting Curve
(What if we add another retrieval prompt?)
100
75
50
25
A second full practice and retrieval
(after having forgotten content again...)
Even *greater* retention in the long run
Day 1
Day 2
Day 3
Day 4
Day 5
Day 6
senseandsensation.com

CAUSES OF FORGETTING

Lack of Attention/Concentration

Lack of sleep

Medications

Health issues

Aging

Alcohol

Stress and anxiety

Depression

Motivated forgetting

STRATEGIES TO MINIMISE FORGETTING

Feedback: Check your learning frequently through tests, answer keys, or peer discussion so that mistakes are corrected and correct responses are strengthened.

Recitation: After studying, close the book and say or write the main ideas in your own words; explaining the content to someone else further consolidates memory.

Over-learning: Practise a little beyond the point of correct recall, preferably in more than one short session, so that the material becomes automatic and resistant to forgetting.

PQRST method: Follow five steps-Preview, Question, Read, Self-recite, and Test-to convert reading into an active process and improve both understanding and recall.

Use of foods, medicine and vitamins: Maintain a balanced diet, proper hydration, exercise, and avoid using drugs or supplements for "memory boosting" without professional medical advice, as these only indirectly support learning.

Mnemonics: Use acronyms, visual images, stories, or the method of loci to link new information with familiar cues, making later retrieval easier.

Learning by whole and parts: For short material, study the whole lesson first; for long material, divide it into meaningful parts, master each part, and then connect them to the overall idea.

Serial position: Place the most important points at the beginning and end of lists or lessons because people usually remember first and last items better than middle items.

Sleep: Ensure adequate and regular sleep, since consolidation of new learning takes place during sleep and improves later recall.

Review: Revise learned material at spaced intervals (for example, after one day, one week, and one month) so that memories remain strong over time.

Cues: Create clear retrieval cues-key words, headings, colour codes, and mental pictures-to help you recall information quickly when needed.

Selection: Highlight or underline only key ideas and prepare brief notes, instead of trying to remember every line of the text.

Spaced practice: Distribute study over several sessions with short breaks rather than continuous cramming; this spaced practice supports long-term retention.

Organization: Arrange ideas logically in outlines, charts, or concept maps so that related information is grouped together and easier to remember and retrieve.

EDUCATIONAL IMPLICATIONS

Use Meaningful Learning: Students remember better when lessons are connected to real-life examples.

Repetition and Revision: Regular review strengthens retention and reduces forgetting.

Avoid Overloading: Present limited information at a time to prevent mental fatigue.

Use Multiple Senses: Visual, auditory, and kinesthetic methods improve memory retention.

Encourage Understanding over Rote Learning: Logical understanding leads to long-term retention.

Create Positive Emotions: Pleasant experiences enhance both memory and learning.

Timely Recapitulation: Quick review after learning prevents early forgetting.

THANK YOU

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