Learning how to learn

Learning how to learn is a vital skill that affects every aspect of our lives. This presentation will explore different theories, strategies, and obstacles associated with learning and provide an overview of how to develop a growth mindset.

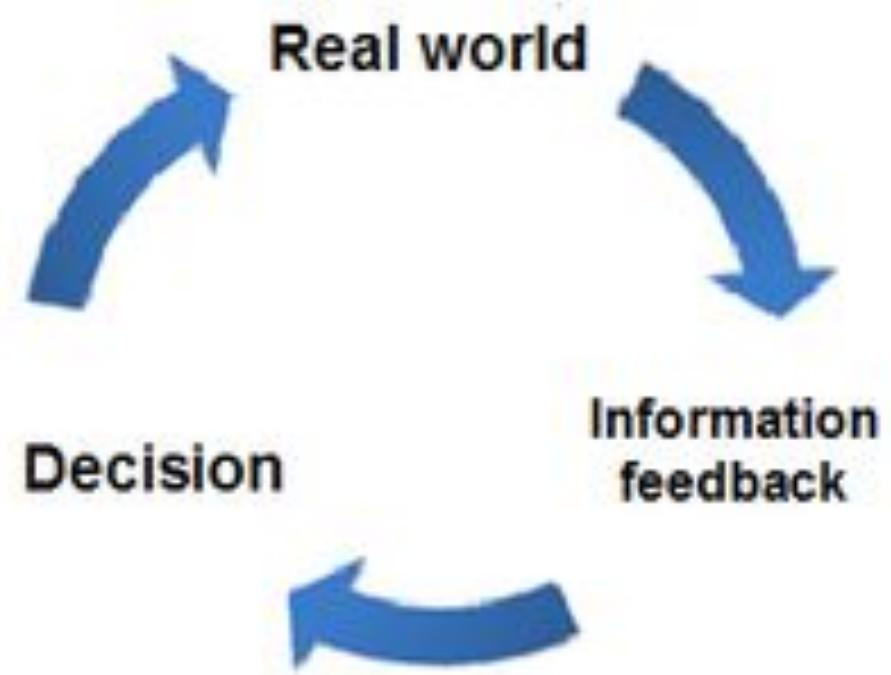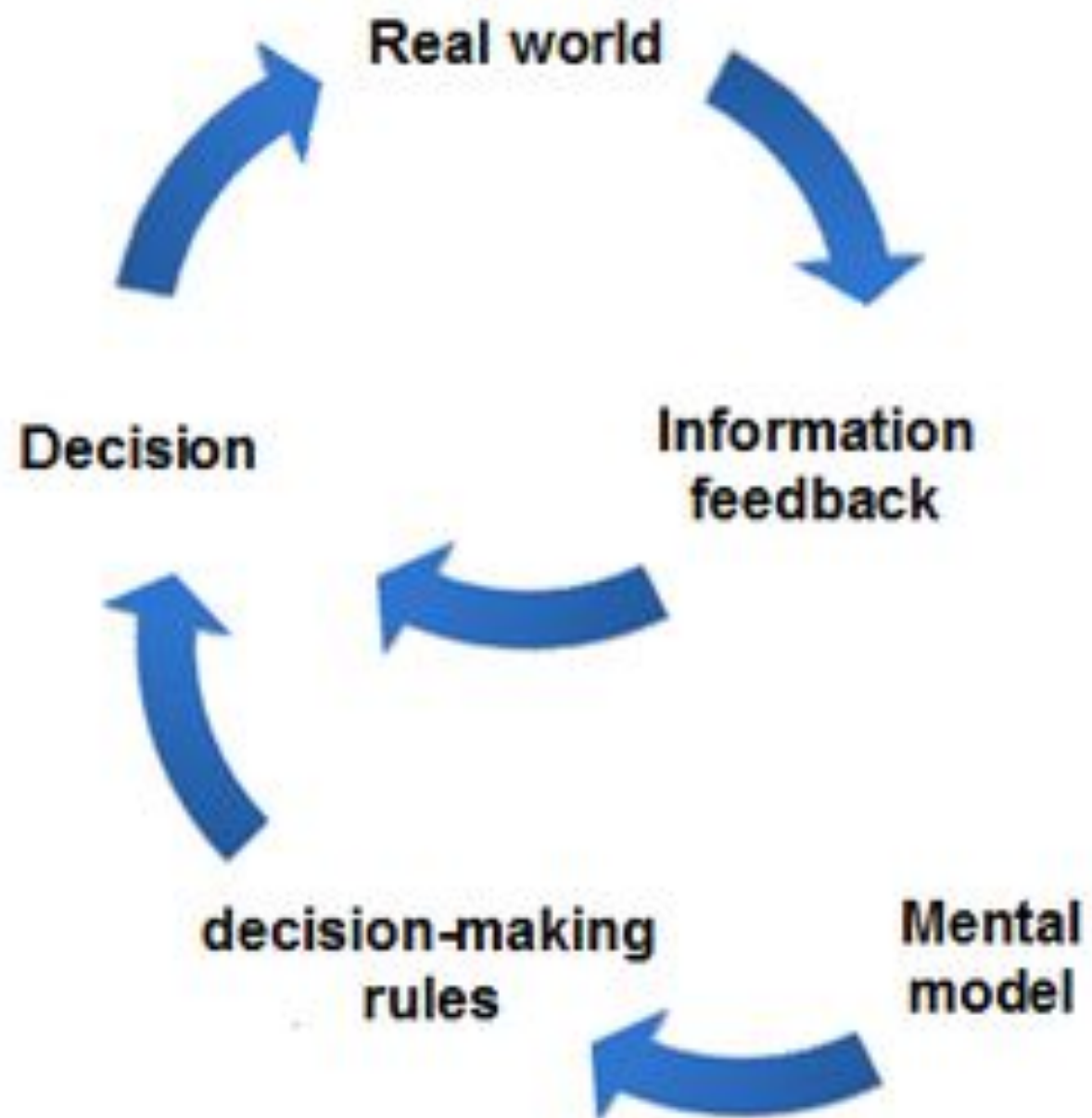**Kaveh Yazdifard &
Azadeh Derakhshan**

Single-loop learning

Double-loop learning
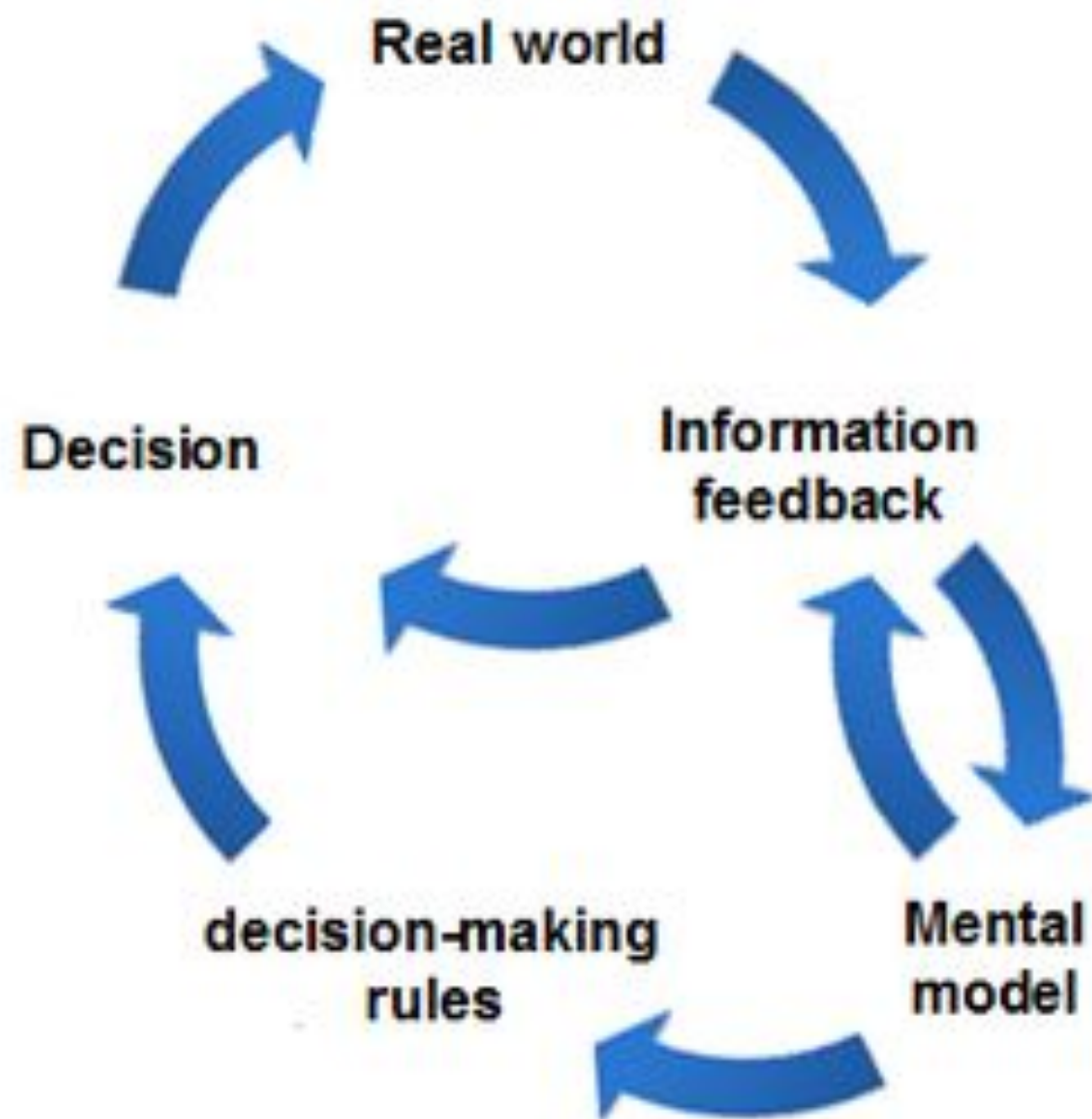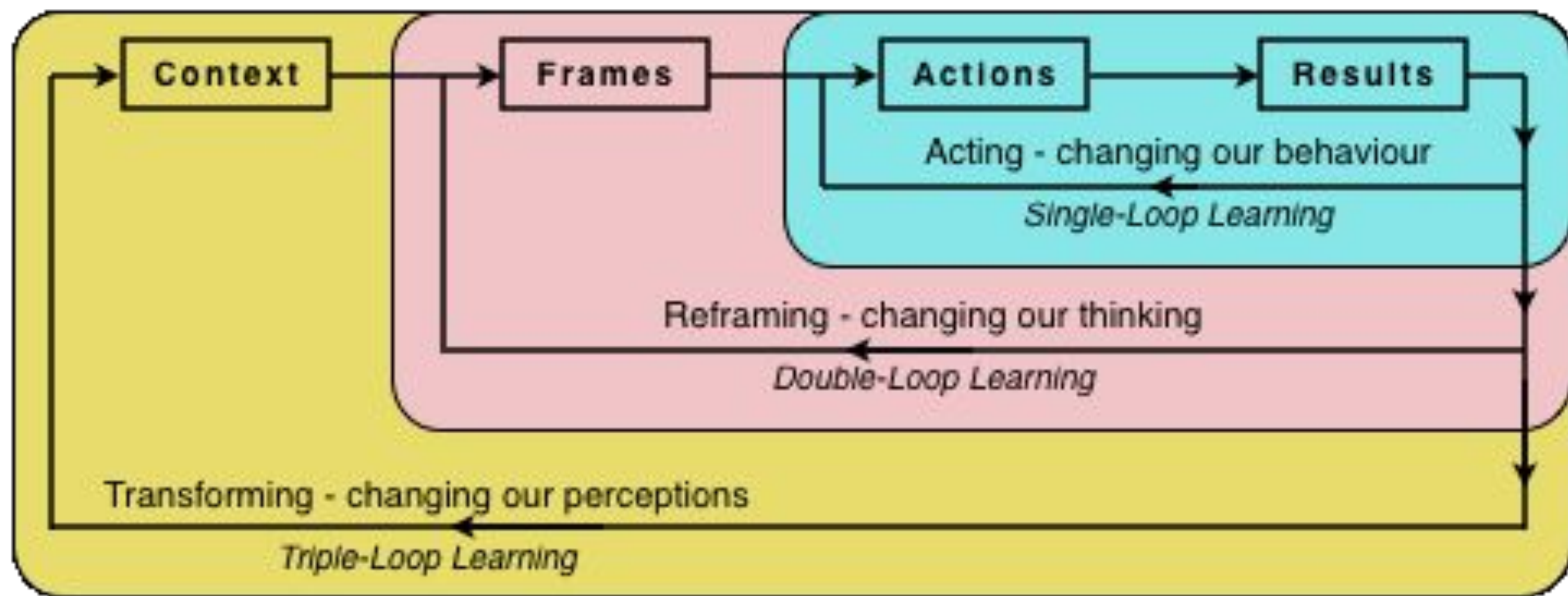
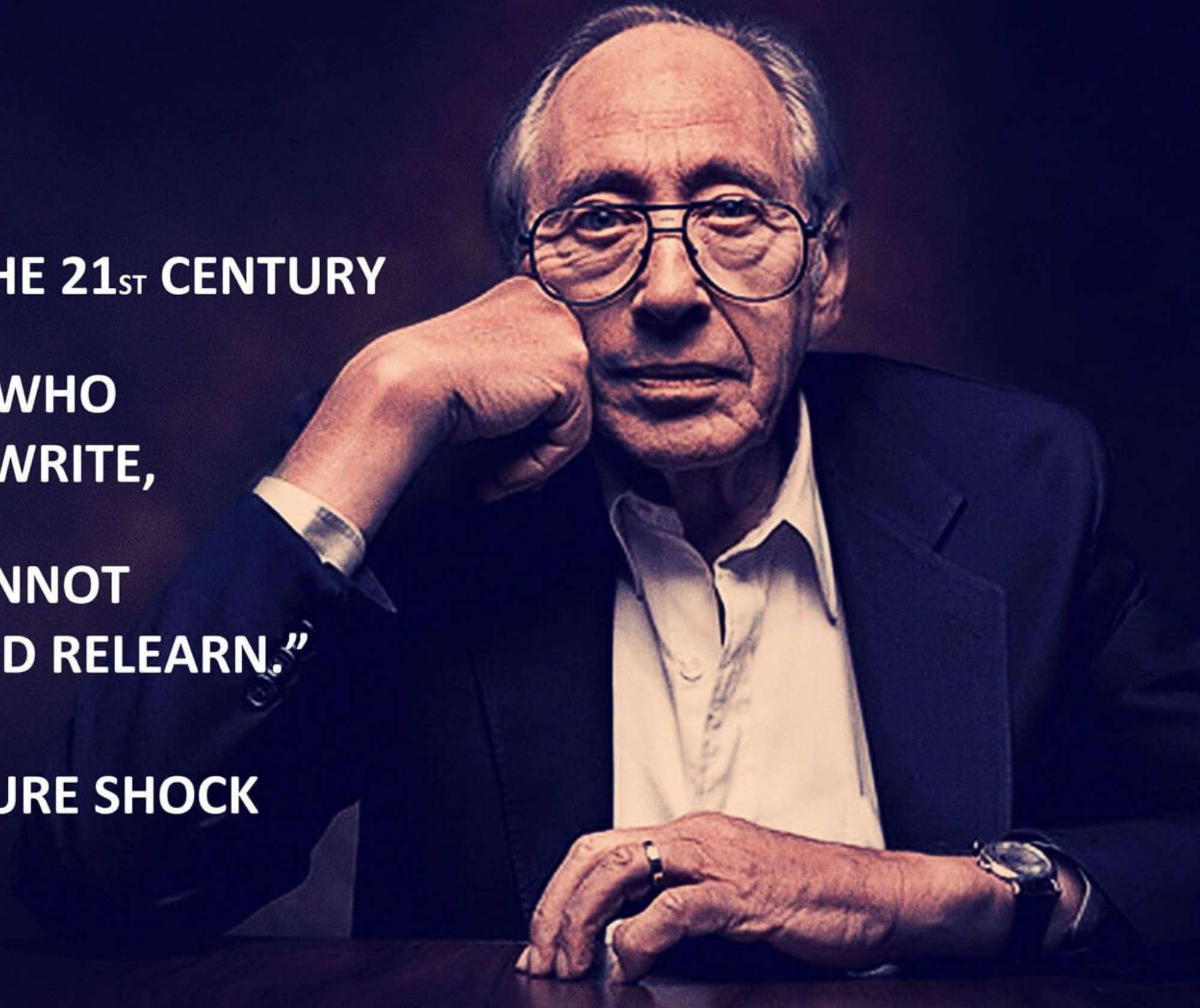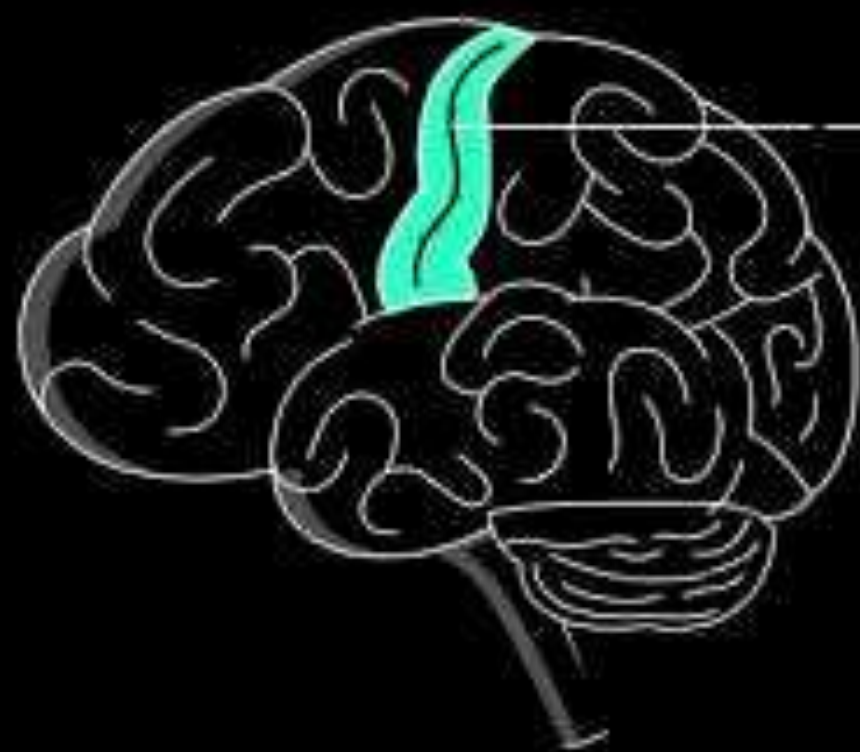"THE ILLITERATE OF THE 21ST CENTURY

WILL NOT BE THOSE WHO
CANNOT READ AND WRITE,

BUT THOSE WHO CANNOT
LEARN, UNLEARN AND RELEARN."

~ALVIN TOFFLER, FUTURE SHOCK

Takeaway I

Image Credit: Christoph Burgstedt
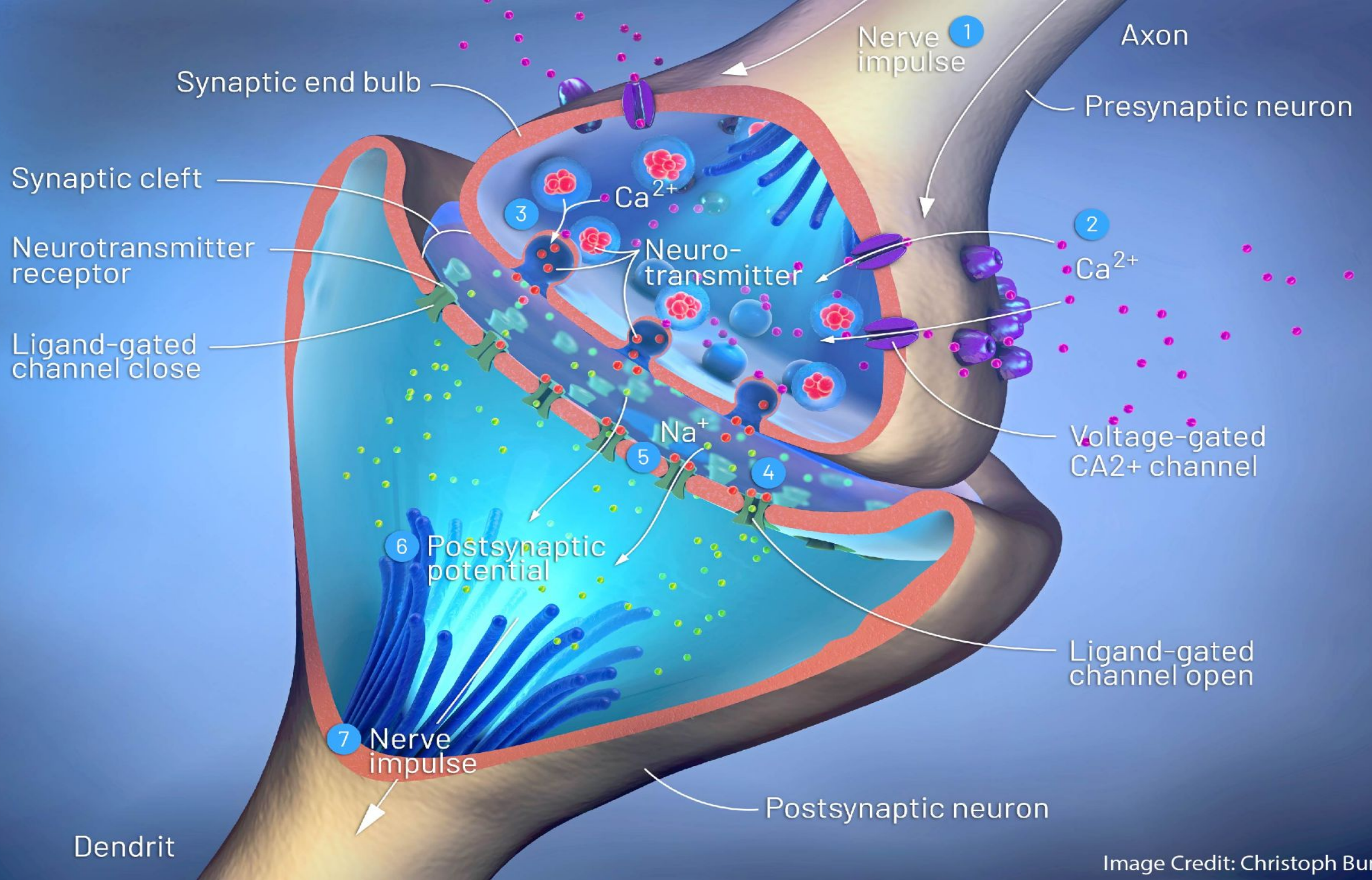
How many synapses are there in the brain?

1. a million billion

2. a million

3. a billion

4. twenty thousand
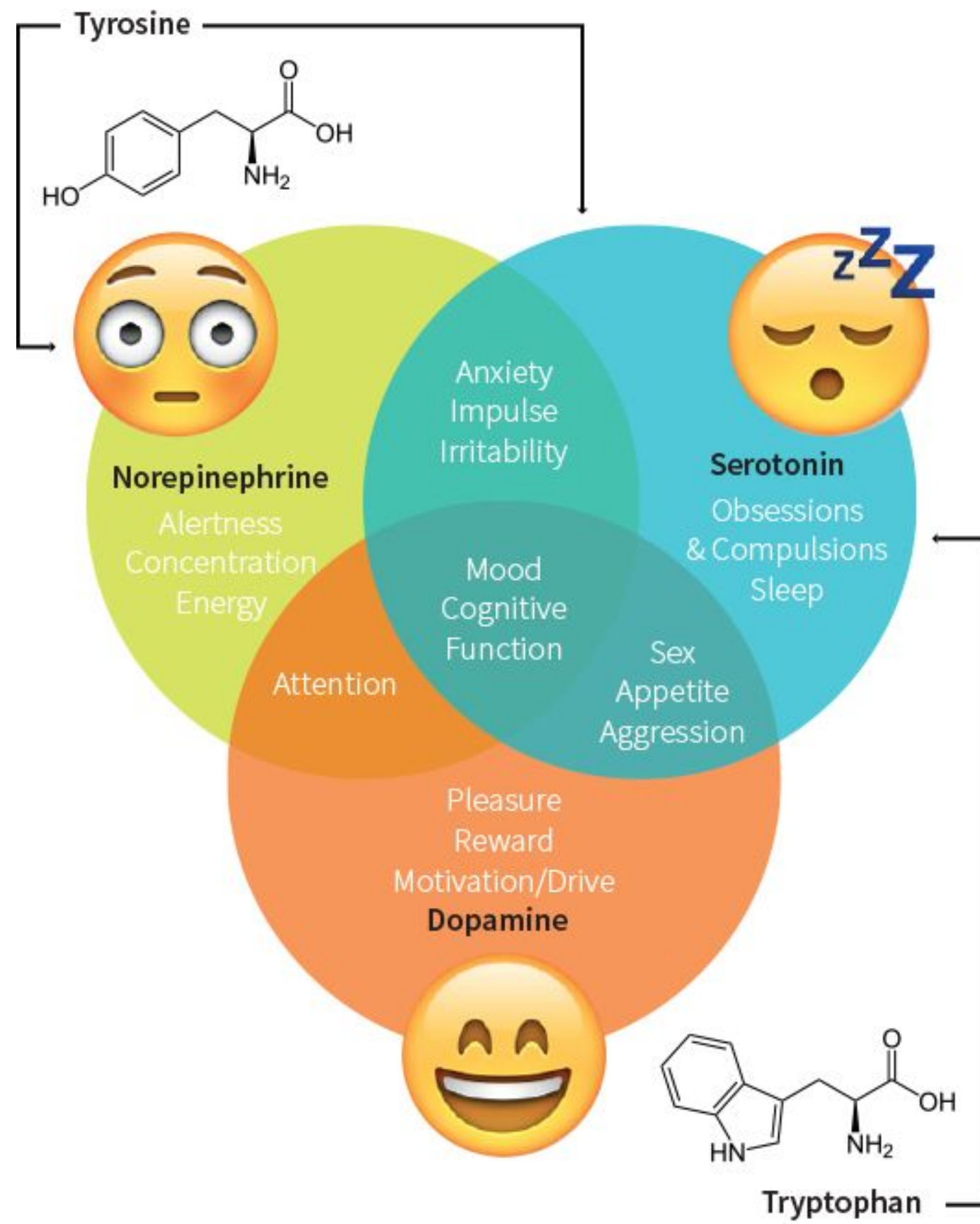
Learning Theories

The general theories of learning are basically conceptual frameworks that explain how information is absorbed, processed, stored, and retrieved by the mind.

LEARNING THEORIES

5 Main Theories of Learning

Behaviourism — Stimulus-Response

Cognitivism — Flow of Knowledge

Constructivism — Mental Models

Experientialism — Learning Experience

Social & Contextual — Learn from and with others
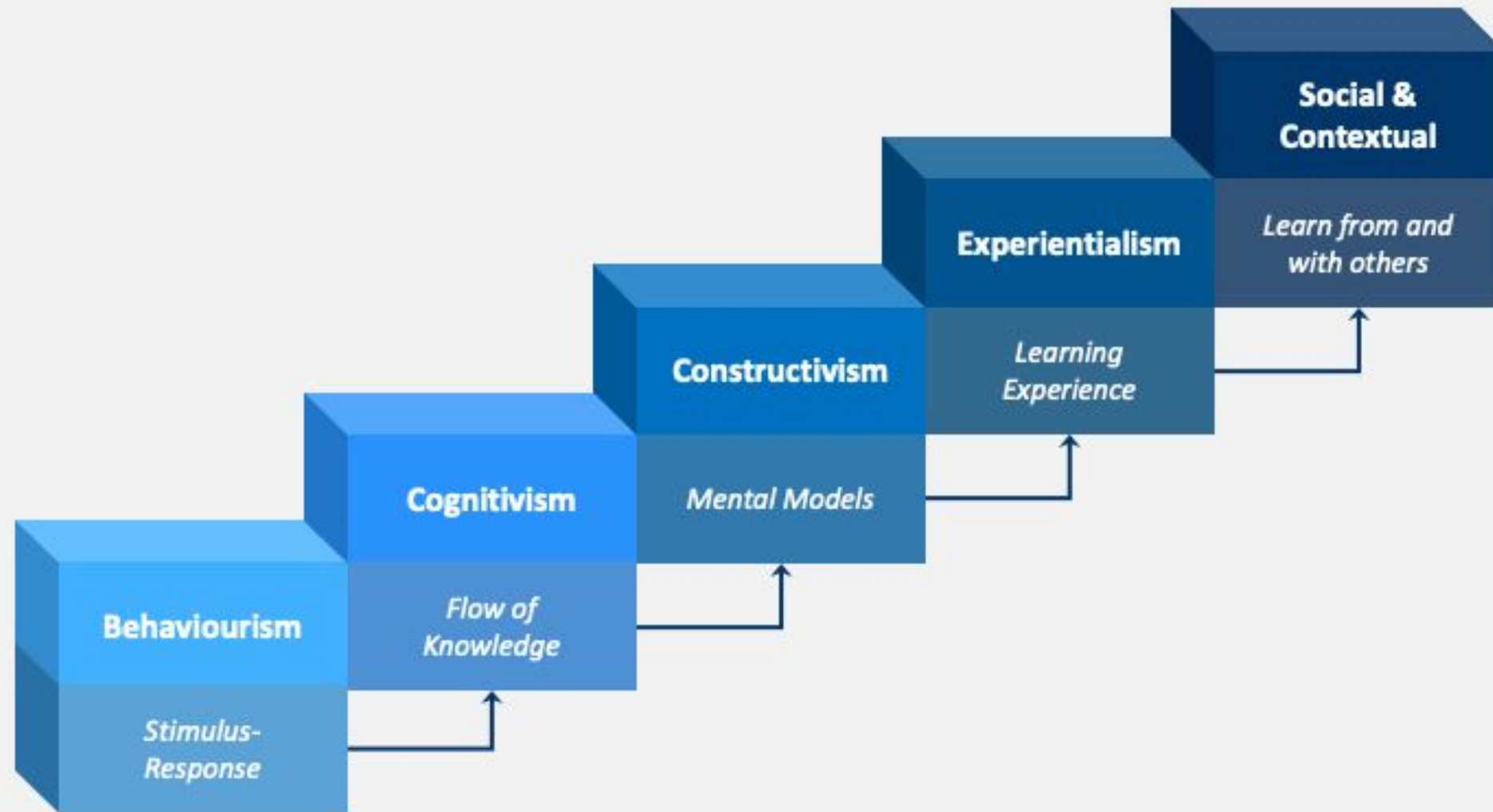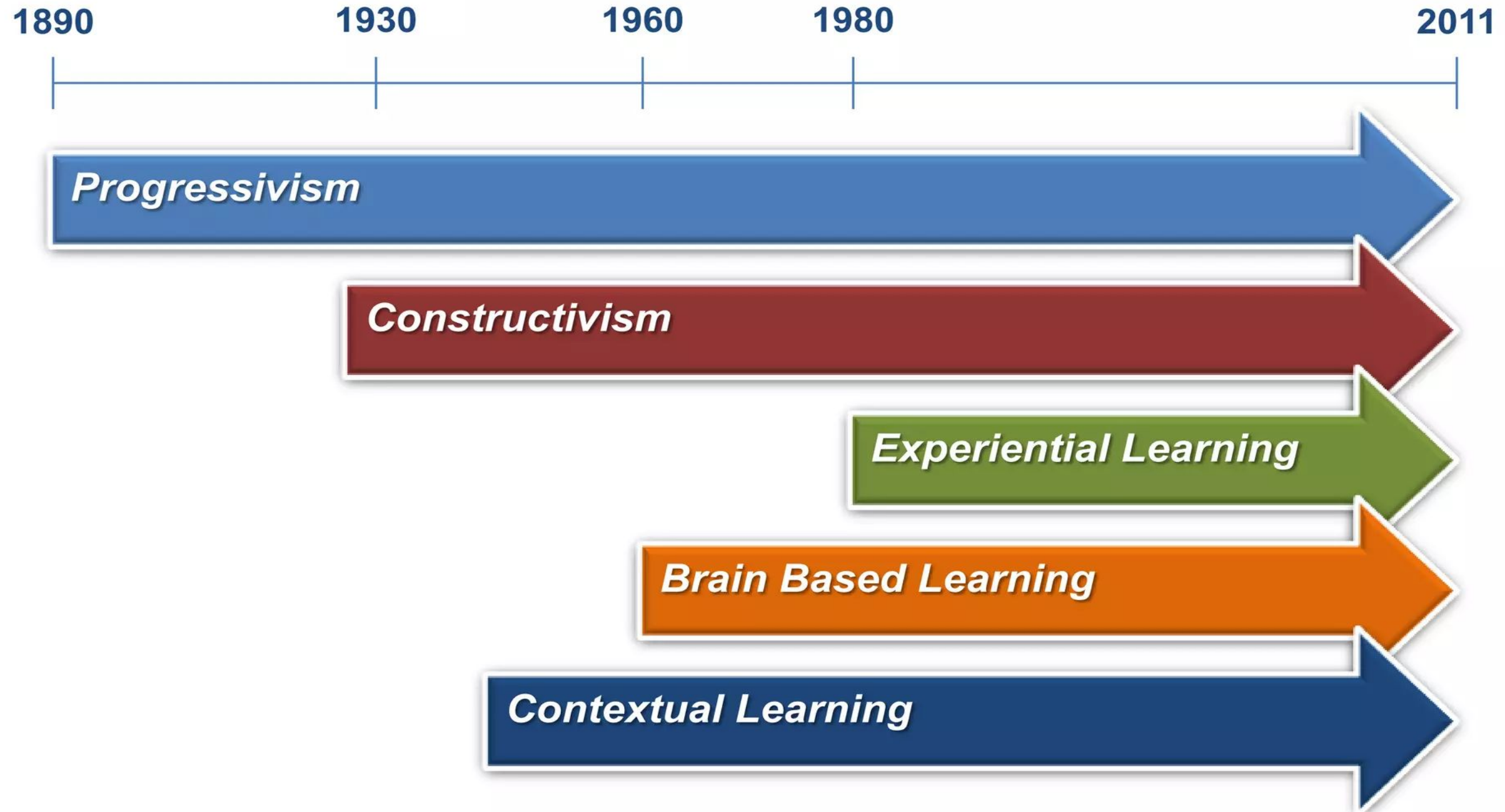
Behaviorism:

○ Pioneered by psychologists like John B. **Watson** and B.F. **Skinner**.

○ Suggests that all behaviors are learned through **interactions** with the **environment**, a process known as **conditioning**.

○ Learning is viewed as a **change in behavior**, and the focus is on the **observable** and **measurable** aspects of learning.

○ Operant conditioning, a key concept within behaviorism, posits that behavior can be shaped by **reinforcement** or **punishment.**
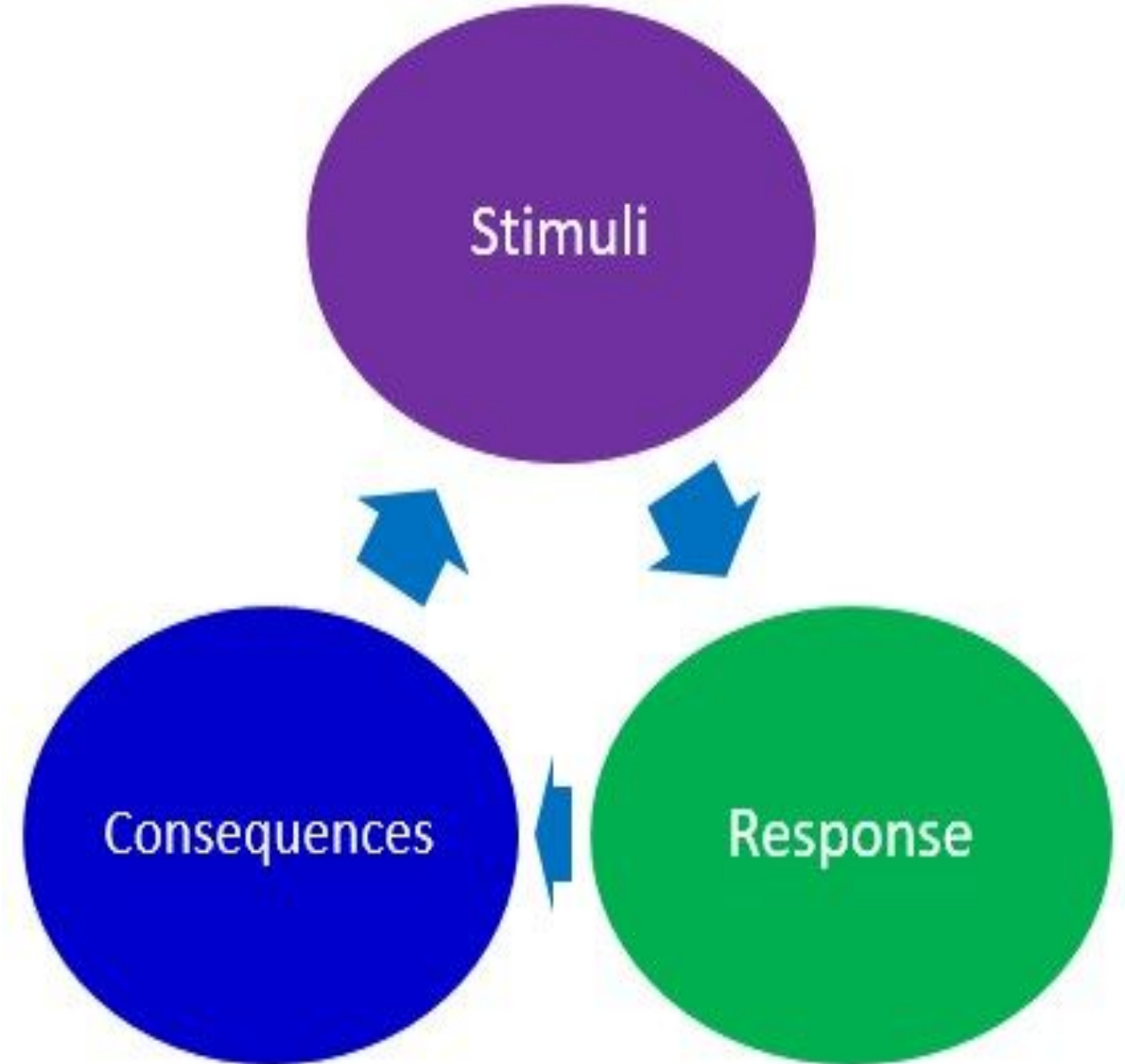
Cognitive Learning Theory:

○ Developed as a response to Behaviorism, it emphasiz
the importance of **mental processe**s in how we learn.

○ Key figures include **Jean Piaget** and **Ulric Neisser.**

○ Recognizes the role of internal thought processes,
including **problem-solving** and **memory.**

○ Learning is seen as an **active process** where informat
is **organized**, **stored**, and **retrieved**.
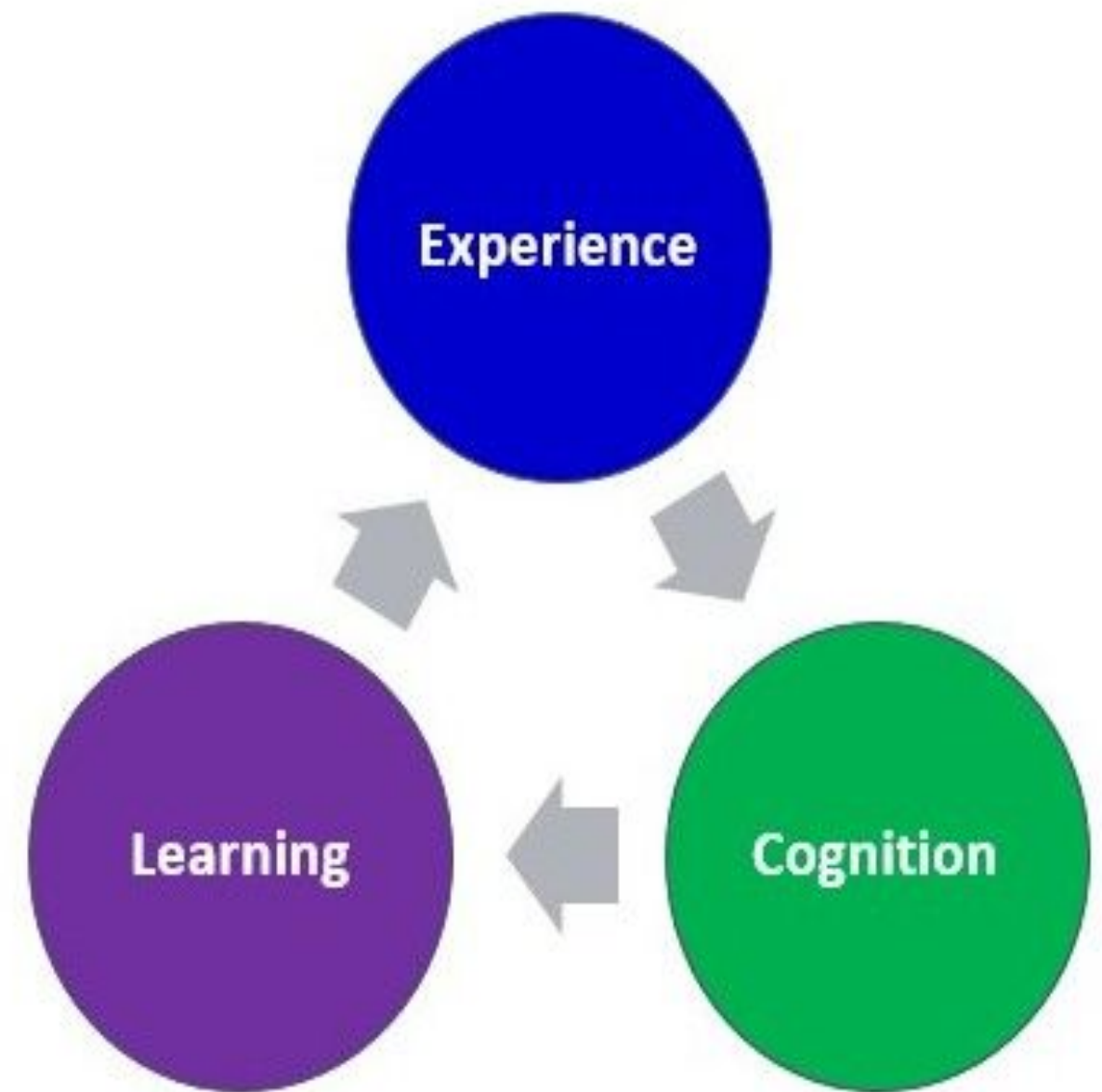
Constructivism:

○ Argues that learners construct **their own understanding** and knowledge of the world, through **experiencing** things and reflecting on those experiences.

○ **Lev Vygotsky** suggested the **social context** of learning is crucial, with this subset being known as social constructivism.
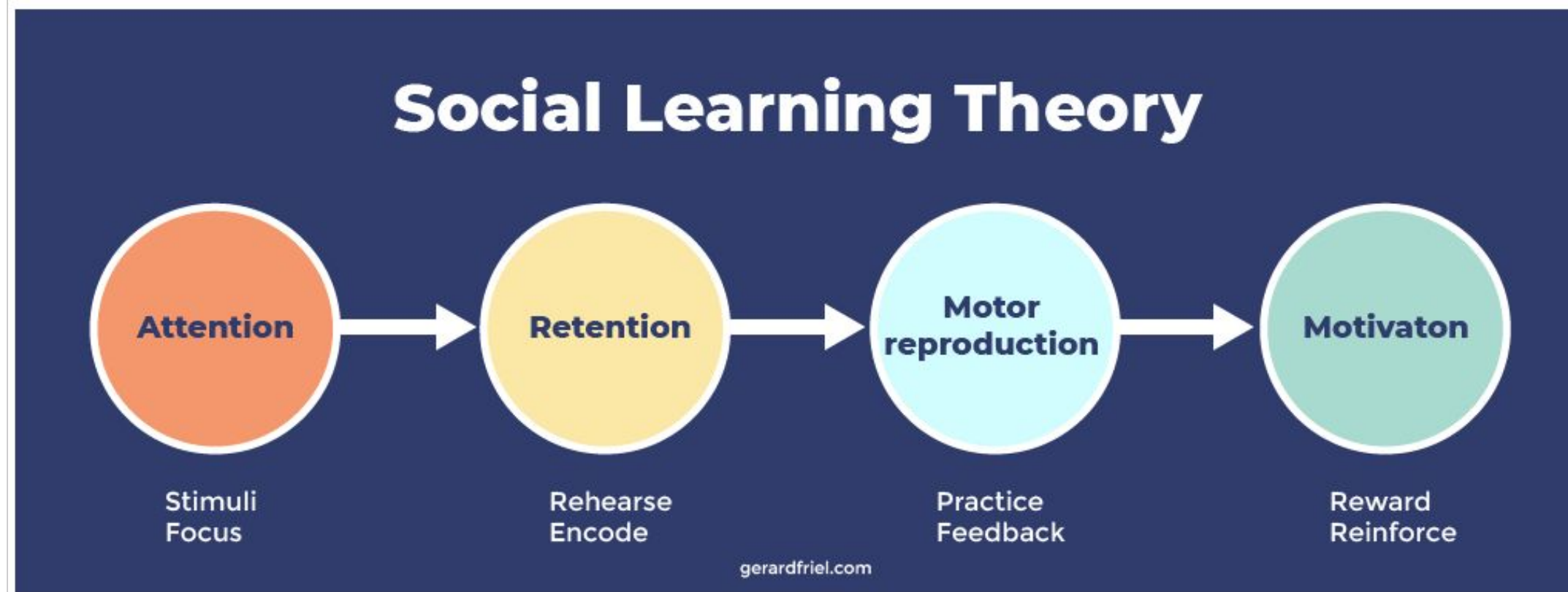
Social Learning Theory:

○ Introduced by **Albert Bandura**, this theory combines **cognitive and behavioral** frameworks.

○ It posits that **people learn from one another**, via **observation**, **imitation**, and **modeling.**

○ Bandura introduced the concept of **self–efficacy** and emphasized the role of **observational learning**, where behaviors are learned by watching and imitating others.

Information Processing Theory:

○ Likens the human mind to a **computer**, where information comes in, is **processed**, **stored**, and then **retrieved**.

○ Focuses on the way people process the information they receive, not just on what becomes of that information.

○
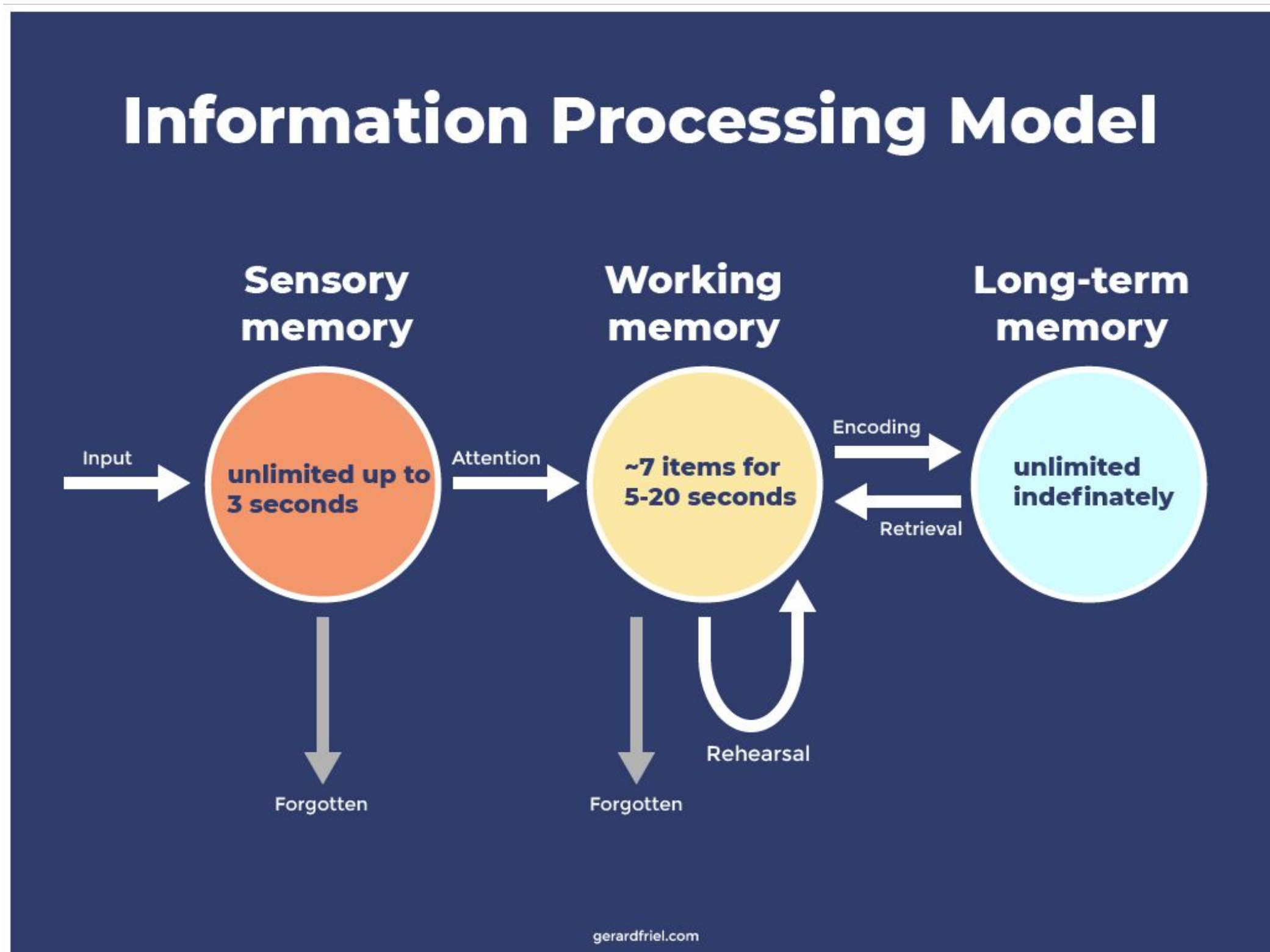
Understanding how
the brain works

A **semantic network** is like a map of related ideas or concepts. It contains points, called "**nodes**," which represent different ideas, and lines, called "**edges**," connecting them, which represent the relationships between these ideas. This map helps to show **how different concepts are linked to each other** and how they can be organized **in our minds** or in computer systems.
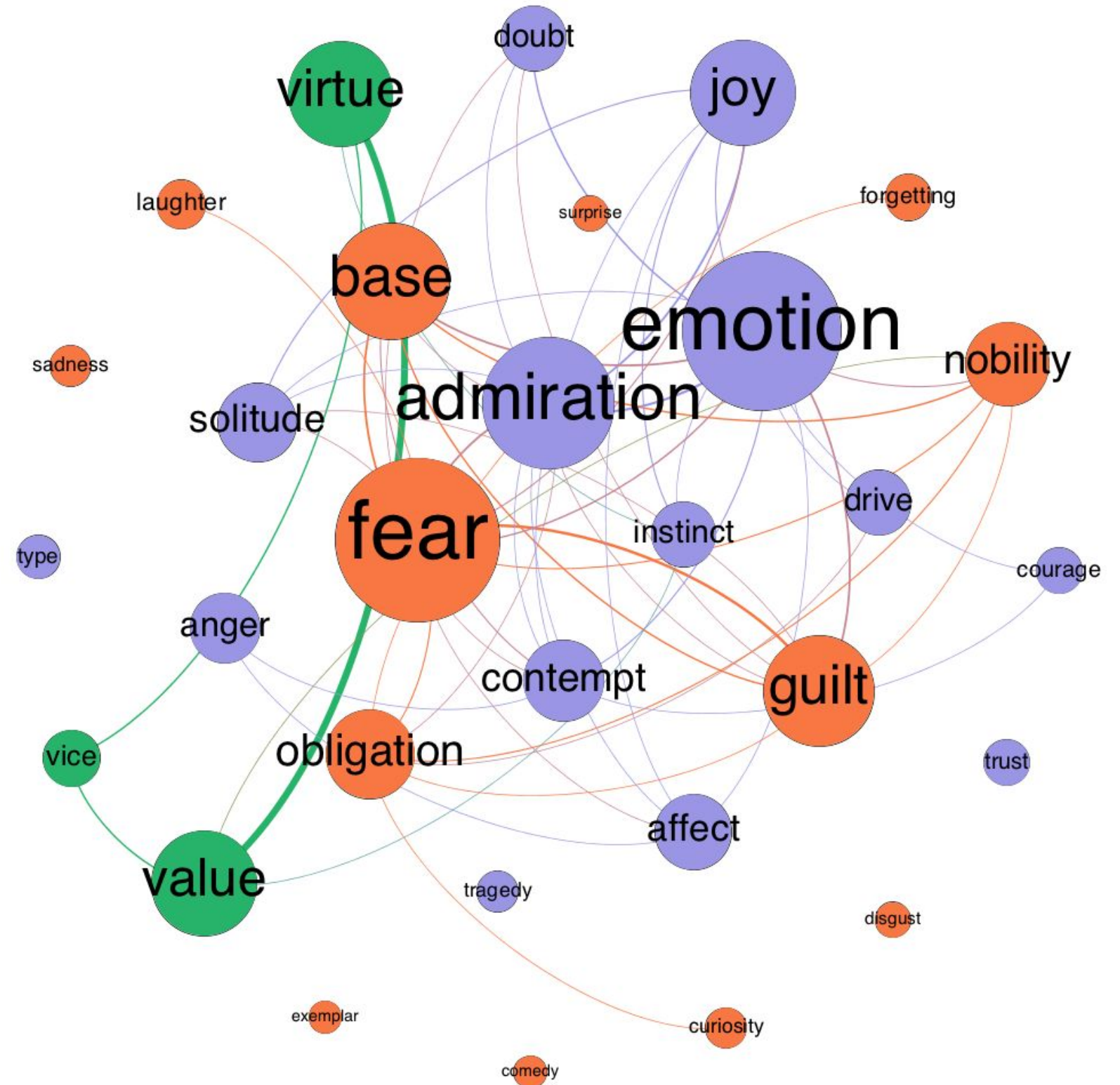
What is the difference between sensation and perception?

- Sensation is gathering info from the environment via your senses.

- Perception is understanding what is being sensed!
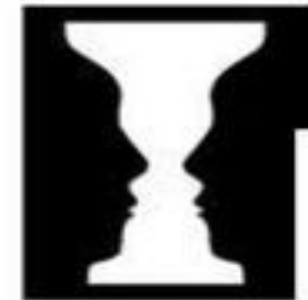
Attention in psychological terms is a cognitive process of **selectively concentrating** on one aspect of the environment while **ignoring** other things. Attention is a critical mechanism that helps an organism to focus its sensory and cognitive resources on a **particular stimuli**, which is essential for effective processing of information in a world full of sensory input.
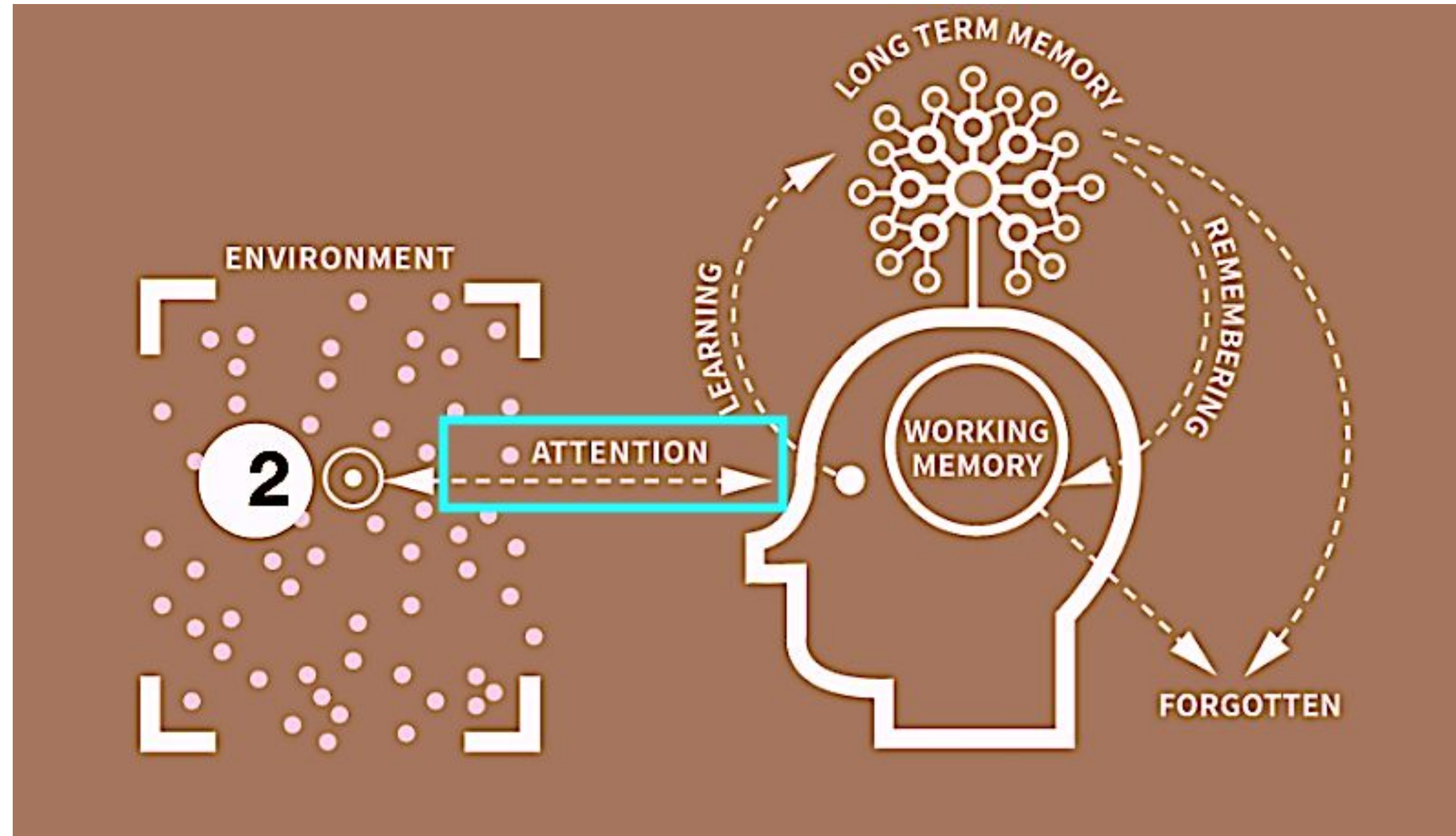
Working memory is the brain's system for temporarily **storing** and **managing** the **information** required to carry out **complex cognitive tasks** such as **learning**, **reasoning**, and **comprehension**.

Example: Working memory is at play when you do **mental arithmetic, holding numbers** in your mind while **manipulating** them to find a sum or product.
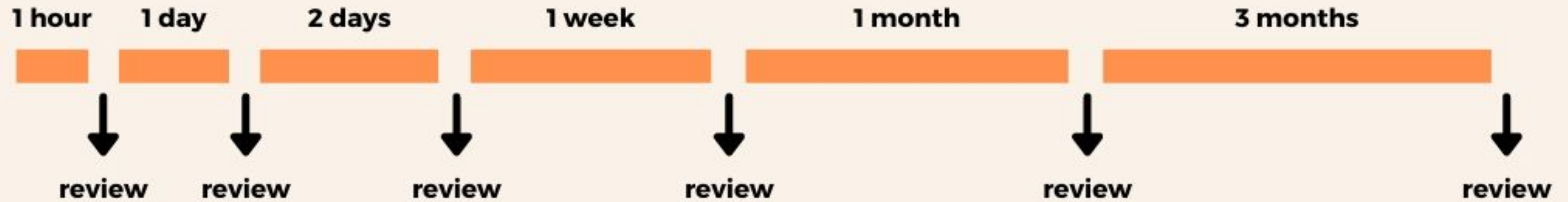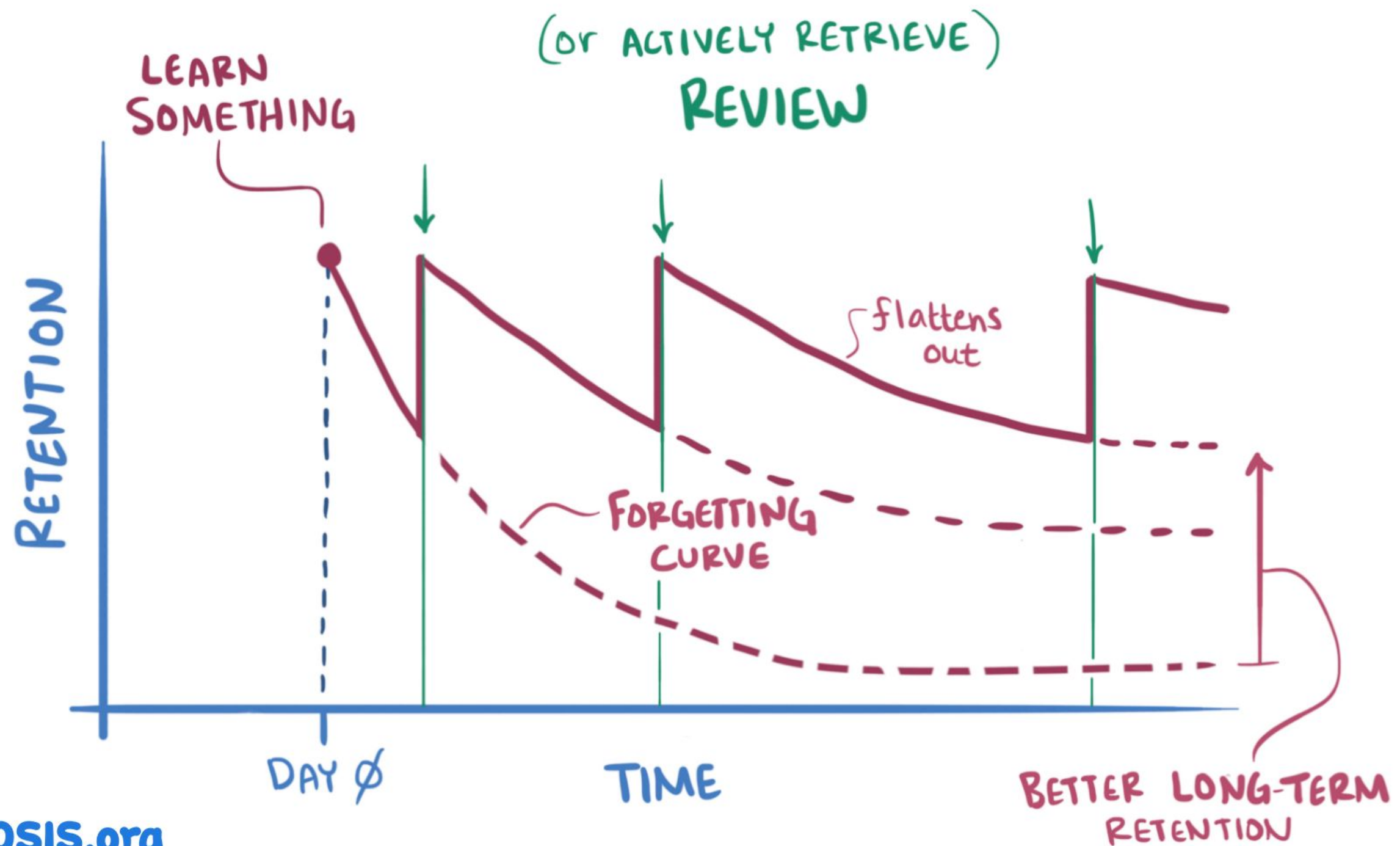
EXECUTIVE FUNCTIONING SKILLS

Executive Functioning encompasses a wide range of skills that help us organize our behavior, effectively complete tasks, and engage socially with others.

آنچه را که به تازگی شنیده یا خوانده اید
فراموش می کنید

در شروع و یا تکمیل کارها مشکل دارید

در اولویت بندی کارها مشکل دارید

در سازماندهی افکار خود مشکل دارید

در پیروی از دستورالعمل ها یا دنباله روی
از مراحل مشکل دارید
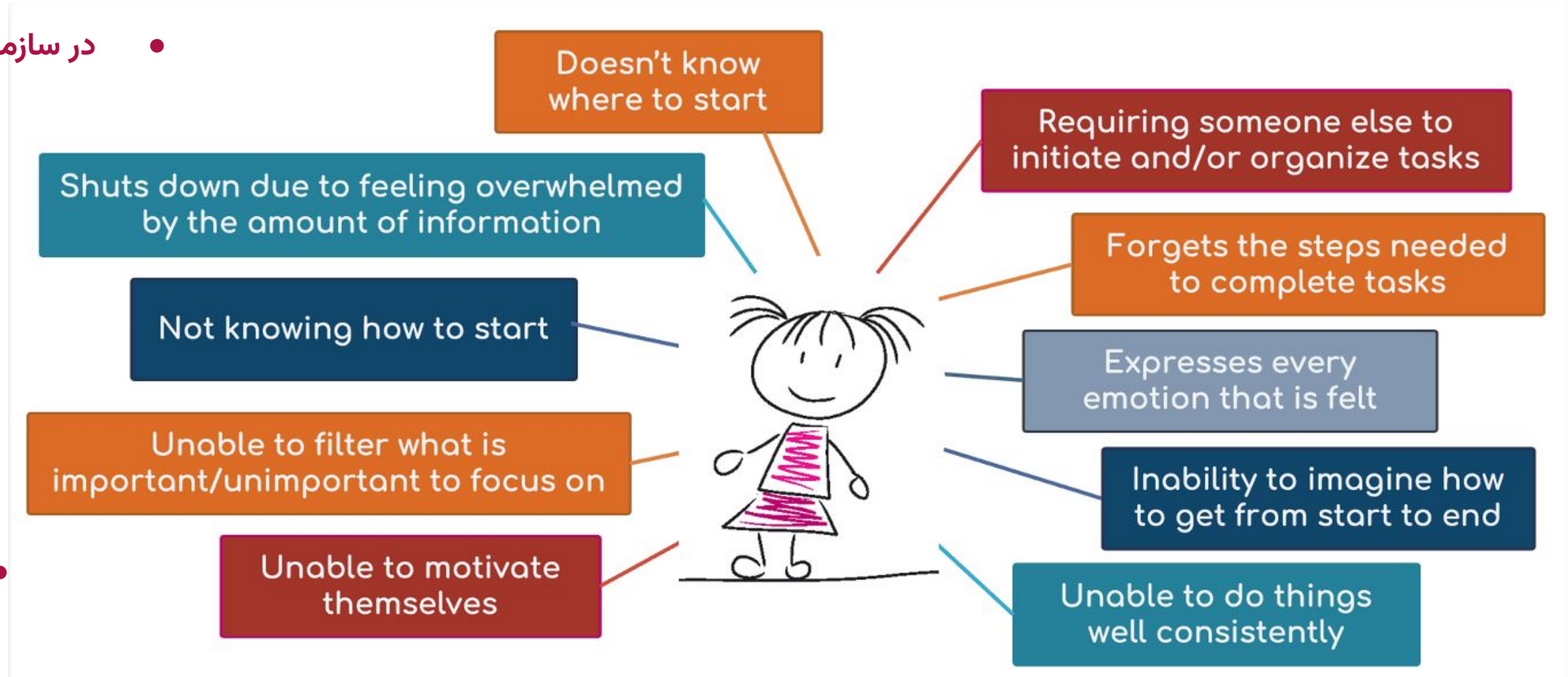
در مدیریت زمان
خود مشکل دارید

در یافتن وسایل خود
مشکل دارید

وقتی قوانین یا روال ها تغییر می کنند
وحشت می کنید

در تغییر تمرکز از یک کار به کار دیگر مشکل
دارید

بیش از حد احساساتی میشوید و روی
موضوعات جزئی تمرکز می کنید

Doesn't know where to start

Shuts down due to feeling overwhelmed by the amount of information

Not knowing how to start

Unable to filter what is important/unimportant to focus on

Unable to motivate themselves

Requiring someone else to initiate and/or organize tasks

Forgets the steps needed to complete tasks

Expresses every emotion that is felt

Inability to imagine how to get from start to end

Unable to do things well consistently

عملکردهای اجرایی

- حافظه فعال
- انعطاف‌پذیری
- بازداری پاسخ
- استدلال
- برنامه‌ریزی
- توجه

- نقش **عملکردهای اجرایی** در **مغز** مانند نقش **مدیرعامل** در سازمان (رهبر ارکستر) است.
- مهارت‌های شناختی که برای اجرای موفقیت‌آمیز فعالیت‌های پیچیده و رفتارهای **معطوف به هدف** (**Goal-Directed Behavior**) مورد نیاز است.
- **هر عملی** که نیاز به برنامه‌ریزی، سازماندهی، حافظه، مدیریت زمان و تفکر انعطاف‌پذیر داشته باشد نیازمند عملکردهای اجرایی مغز است.
- ضعف در هر یک از مراحل اجرایی یک عمل با ضعف در اجزای عملکردهای اجرایی مغز مرتبط است.
- با **تقویت** عملکردهای اجرایی می توان شاهد **ارتقا کلی عملکرد** هر فرد باشیم.

Time Management:

Time management includes our capacity to **estimate** time, **allocate** time, and stay within time limits and **deadlines**.

Principles of time management and increasing personal productivity

- **Prioritize** your tasks.

- Define your **goals.**

- Make a **schedule**.

- **Focus** on **one thing** at a time.

- **Set deadlines** for yourself.

- Cut out **distractions**.

- Take regular **short breaks**.

- **Delegate** when possible.

- **Review** and improve your **process** regularly.

Procrastination can be a **difficult habit** to break, but applying these strategies can help develop better work habits and increase productivity.

**Techniques** to prevent procrastination

- Break tasks into **small steps**.

- Set **clear deadlines.**

- **Use a timer** for focused work sessions.

- **Eliminate distractions**.

- **Prioritize** tasks.

- **Commit to someone** else.

- **Reward** yourself after tasks.

- **Visualize** the finished task.

- **Start** with the **easiest** part.

- **Understand** your procrastination **triggers**.

Frontal Lobe

The frontal lobe is involved in problem solving - it helps **define the specifics of what a goal entails.**

The two **work together** to keep you focused on situations and behaviours that are deemed emotionally significant - goals that you care about.

Amygdala

The amygdala helps regulate emotions - it can **evaluate how important a goal is to you.**

مغز ما و هدفگذاری

- **قشر پیش پیشانی (Prefrontal Cortex):** یکی از اجزای اصلی مغز برای هدف گذاری و کنترل عملکردهای اجرایی و شناختی است. این منطقه از مغز نقش کلیدی در تصمیم‌گیری، برنامه‌ریزی، نظم‌بندی، و ایجاد استراتژی‌ها برای دستیابی به اهداف دارد.

- **حافظه:** قدرت حافظه برای نگهداری اطلاعات مورد نیاز برای دستیابی به اهداف بسیار مهم است. حافظه کوتاه‌مدت و حافظه بلندمدت در تعیین اهداف و به خاطر سپردن جزئیات مرتبط با آنها نقش دارند.

- **تصمیم‌گیری:** مکانیزم‌های تصمیم‌گیری در مغز برای انتخاب بهترین راهبردها و اقدامات به منظور دستیابی به اهداف به کار می‌رود. این فرآیند معمولاً در قشر پیش پیشانی مغز انجام می‌شود.

- **توجه و مهار:** انتخاب چیزهای مهم و نادیده گرفتن اشیاء غیرضروری در راه دستیابی به اهداف

- **کنترل هیجانی:** اشتیاق و تحریکات هیجانی نیز برای تعیین اهداف و حفظ انگیزه در طی مسیر به دستیابی به اهداف بسیار مهم هستند.

- **توانایی مدیریت زمان:** مدیریت زمان و تخصیص مناسب زمان برای اقدامات مرتبط با هدف نیز از جنبه‌های شناختی و مغزی مهمی است.
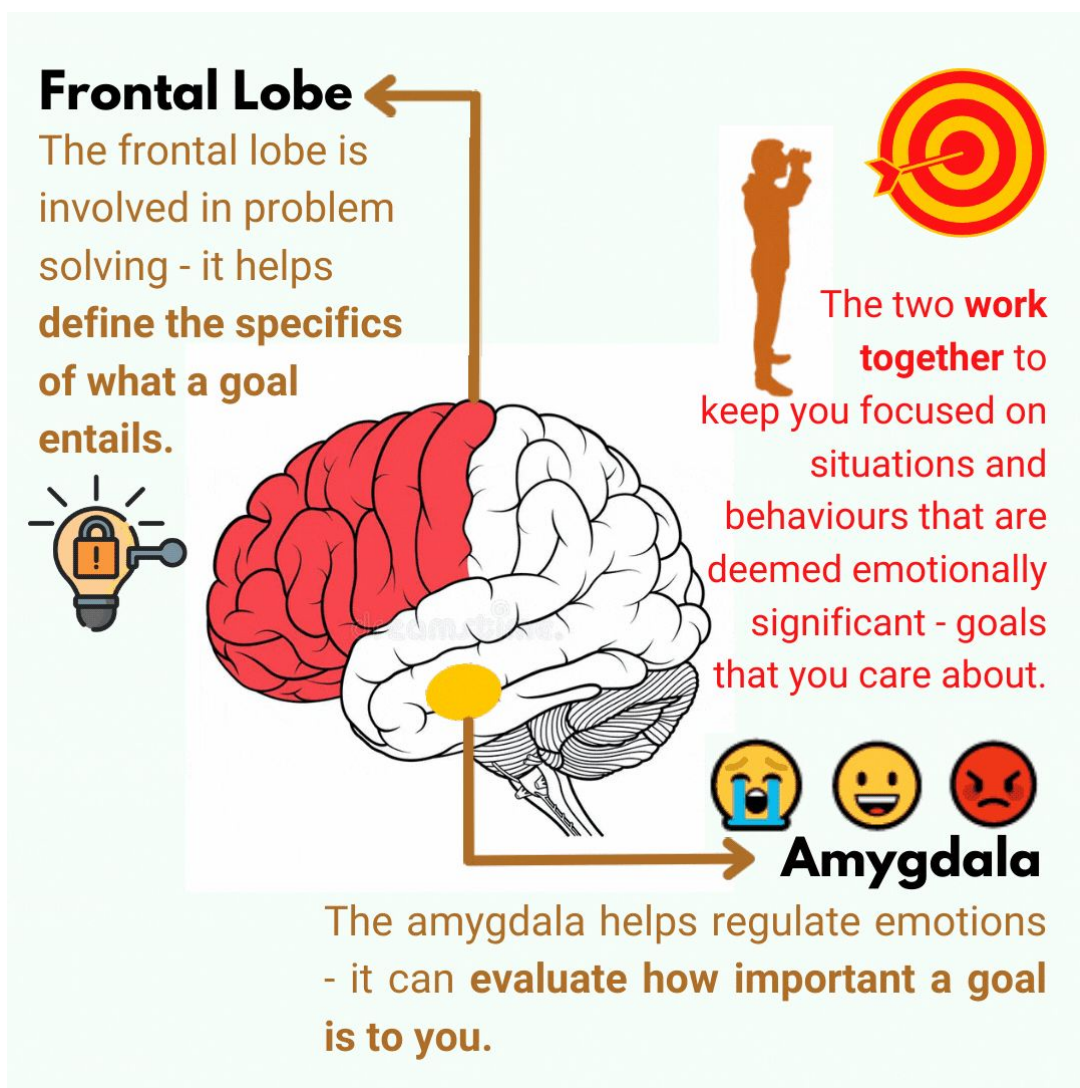
Your Learning Style

Visual

Prefer to learn through visual aids like graphs, diagrams, and illustrations.

Auditory

Learn best through listening and verbal instruction. Remember information by repeating it and hearing it aloud.

Kinesthetic

Learn through hands-on experiences and physical movement. Enjoy activities that involve touching and manipulating objects.

Reading/Writin g

Learn best through reading and writing activities. Enjoy taking notes and organizing information into written formats.

Learning styles

VISUAL
Learn by seeing

- Charts & Graphs
- Infographics
- Outlines
- Visual Aids
- Slide Deck PPTs

AUDITORY
Learn by hearing

- Podcasts
- Verbal instructions
- Discussions
- Recordings

VARK

V
A
R
K

READ/WRITE
Learn by reading/writing

- Books
- Dictionaries
- Note-taking
- Assessments
- Case Studies

KINESTHETIC
Learn by doing

- Role playing
- Scenario training
- Hands-on
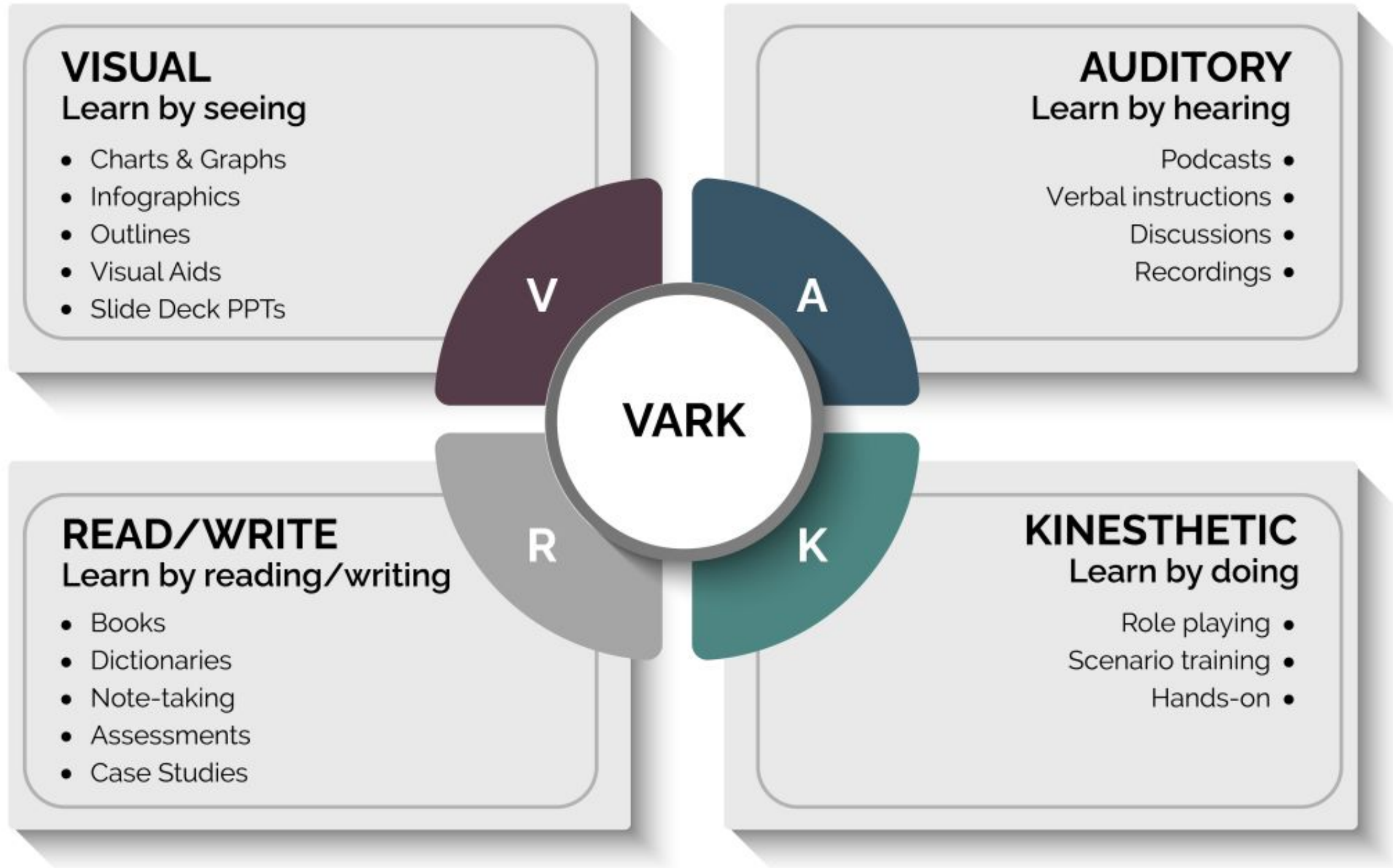
Key Learning Strategies

Overcoming Learning Obstacles

Procrastination

Recognize and overcome procrastination habits that hinder learning progress.

Distraction management

Avoid distractions and maintain focus during learning activities.

Dealing with frustration

Learn how to handle frustration and setbacks during your learning journey.

Real-World Applications

1 **Applying learning methods to specific subjects or skills**

Learn how to apply different learning strategies to specific subjects or skills to improve learning outcomes.

2 **Enhancing career development through effective learning**

Apply learning strategies to enhance your career development and achieve professional goals.

The people that can have the
biggest impact of all are the ones we call:

SMART CREATIVES

These are the product folks who combine
technical knowledge, business expertise,
and creativity.
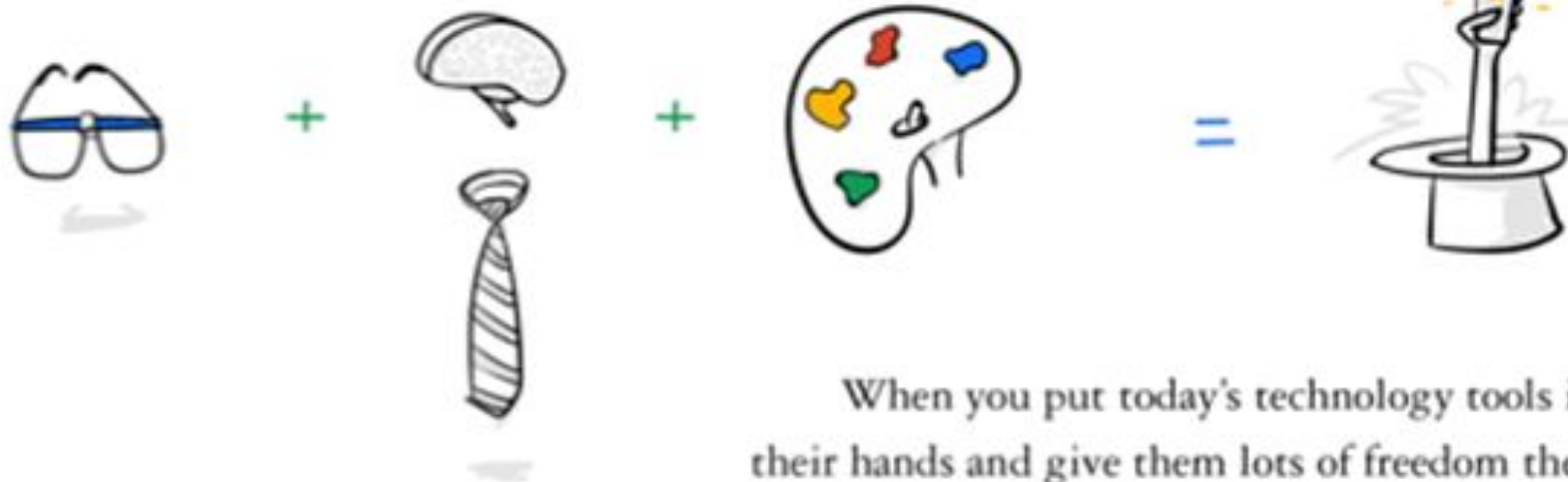
When you put today's technology tools in
their hands and give them lots of freedom they
can do *amazing things, amazingly fast*.

The fox has many tricks.
The hedgehog has but one.
But that is the best of all.
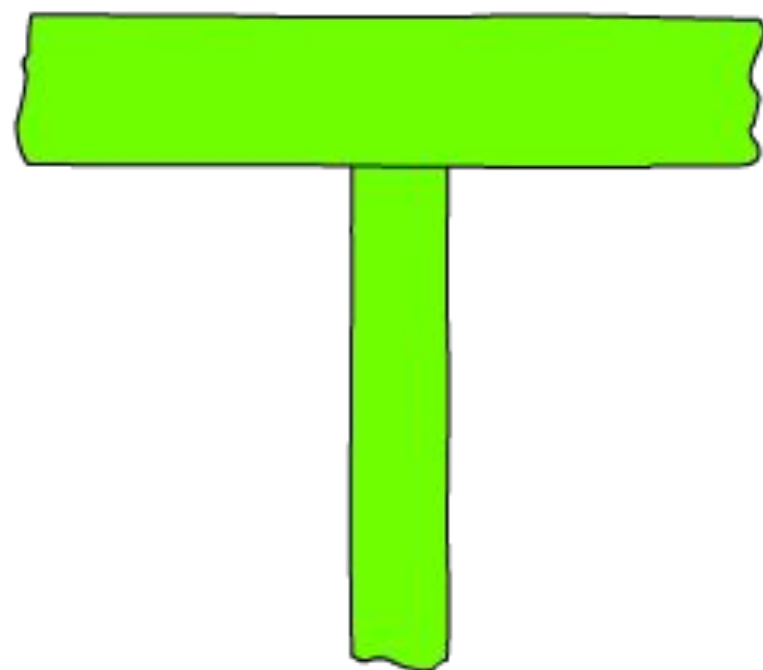– *Archilochus*

©Jen Betton

"I-shaped"
Expert at one thing
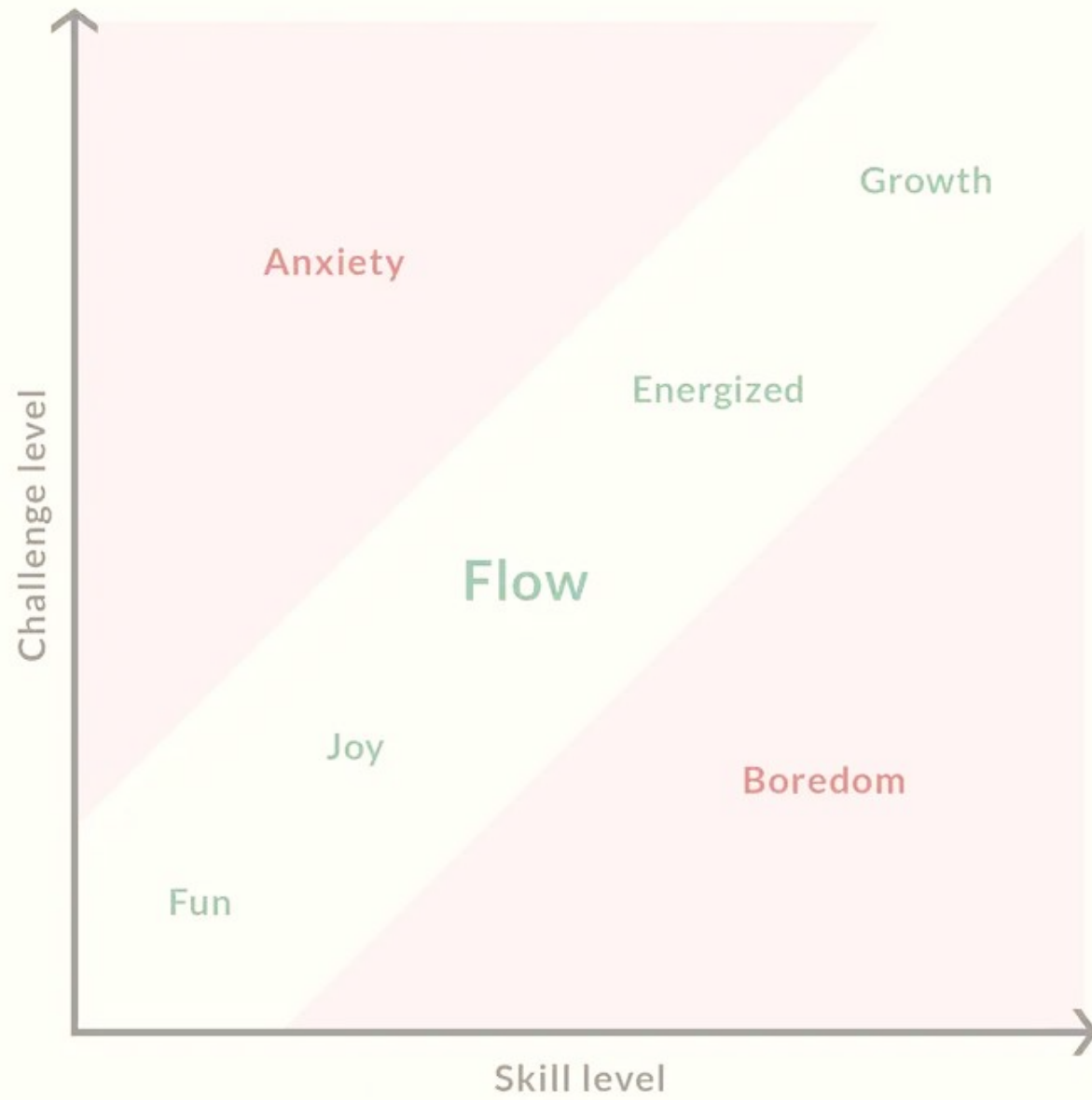
Generalist
Capable in a lot of things
but not expert in any

"T-shaped"
Capable in a lot of things
and expert in one of them

FLOW STATE

Challenge level (vertical axis), Skill level (horizontal axis)

Anxiety, Growth, Energized, Flow, Joy, Boredom, Fun

PositivePsychology.com

Skill (vertical axis: LOW to HIGH), Difficulty (horizontal axis: LOW to HIGH)

Boredom, FLOW, Anxiety
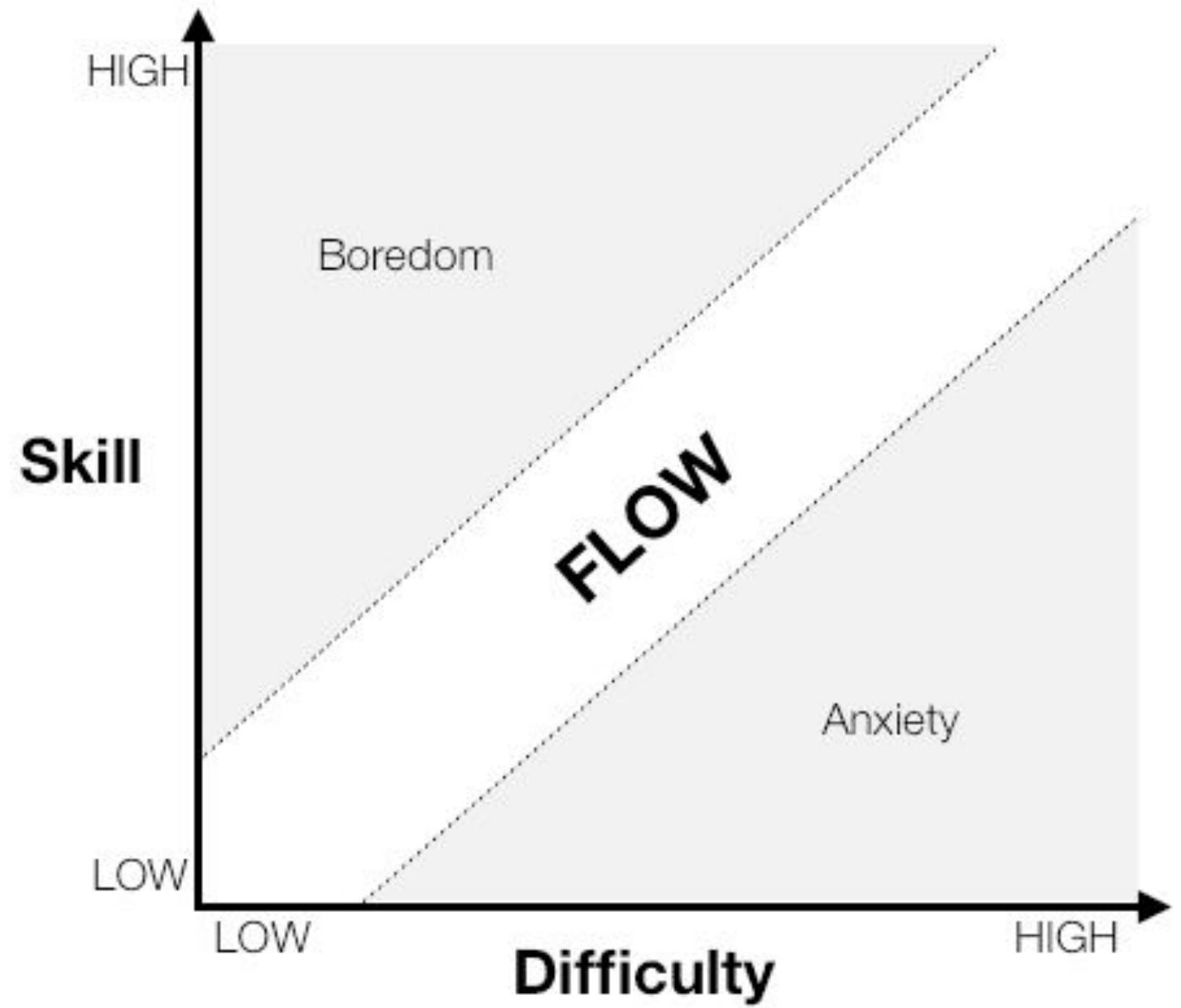
4 States of Flow

If you want to have an optimal human experience you must go get out of your comfortable situation. There is no exception.

1

Struggle Phase

Struggle does not feel good. People are unwilling to challenge their self.

Release Phase

2

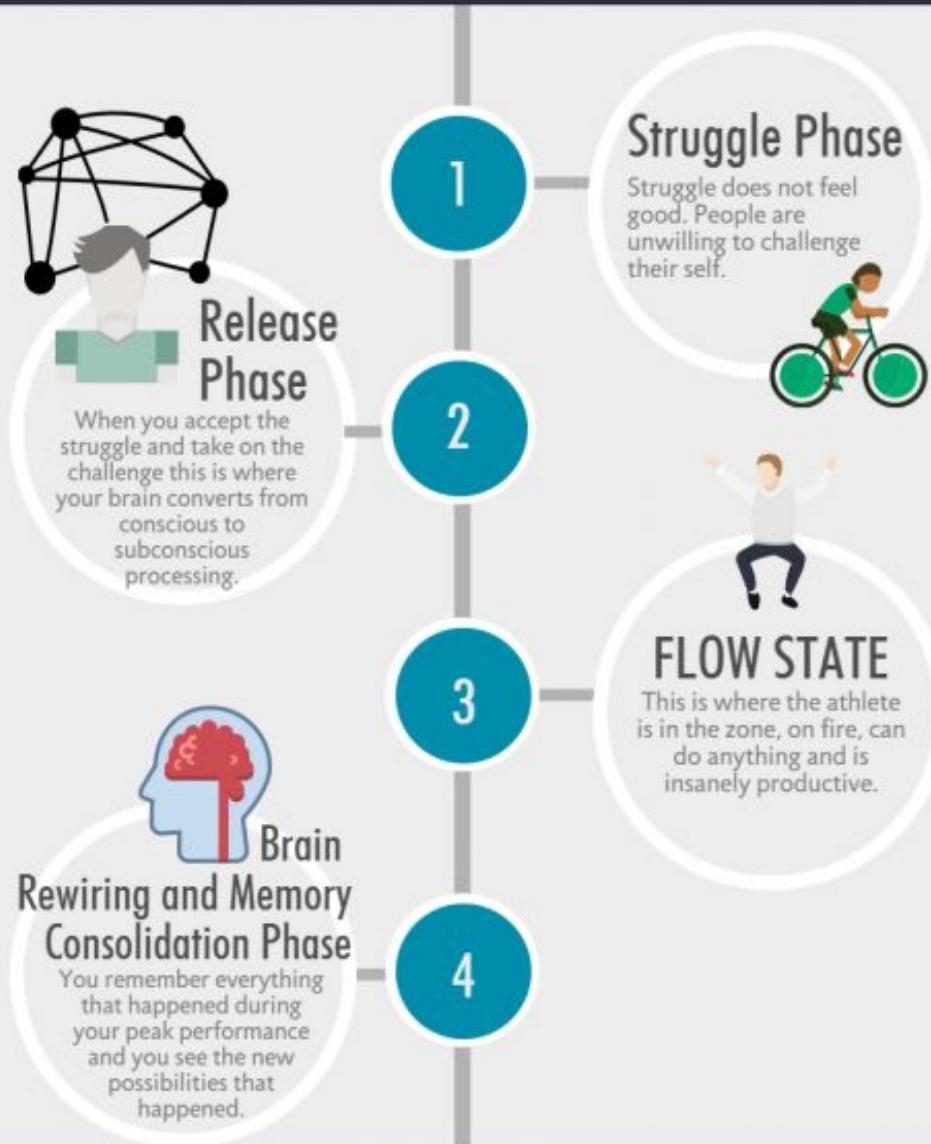When you accept the struggle and take on the challenge this is where your brain converts from conscious to subconscious processing.

3

FLOW STATE

This is where the athlete is in the zone, on fire, can do anything and is insanely productive.

Brain Rewiring and Memory Consolidation Phase

4

You remember everything that happened during your peak performance and you see the new possibilities that happened.

Conclusion

Key Takeaways

🚀
- Learning how to learn is a vital skill for success in any area of life.
- There are different learning styles, and recognizing your learning style can help you learn more effectively.
- The learning process is complex and involves understanding how the brain works.
- Using key learning strategies can improve memory retention and learning.
- Overcoming learning obstacles is a critical part of the learning process.
- Real-world applications of learning can contribute to personal and professional growth.

Encouragement to continue learning 🌟

Continual learning is essential for personal growth and career development. Embrace a growth mindset and always be open to new knowledge and experiences.