

Innovation **Training** Module

Learning to **Unlearn**

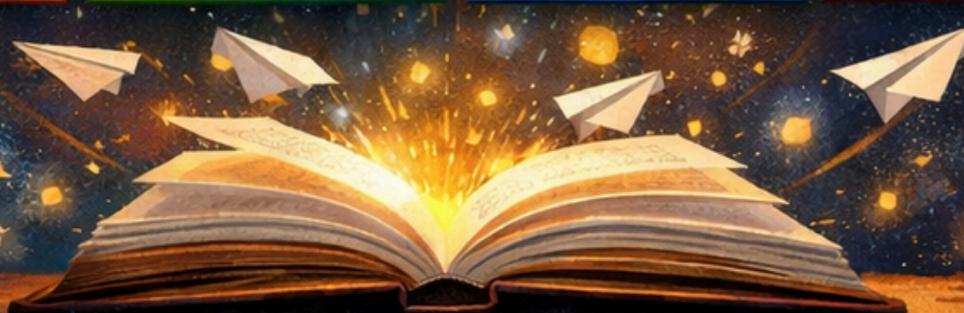


**Question Your
Assumptions**

**Break Free
from Old Thinking**

**Embrace
New Possibilities**

**Innovate
with Courage**



Clear Your Mind, Ignite Innovation

Why Unlearning Matters More Than Learning

From the time we enter school, we are taught how to learn. We learn alphabets, formulas, definitions, rules, and methods. We learn what is “right” and what is “wrong.” Over the years, this learning helps us understand the world and succeed in exams.

But innovation—the kind that leads to new discoveries, inventions, and ideas—requires something more powerful and far less discussed: **the ability to unlearn.**

Unlearning does not mean forgetting everything you know. It does not mean rejecting science, knowledge, or teachers. Instead, unlearning means questioning ideas that may no longer be true, useful, or complete. It means letting go of habits of thinking that limit curiosity. It means creating space in your mind for new possibilities.

Many of the greatest scientific breakthroughs did not happen because someone learned something new—but because someone unlearned what everyone else believed was obvious.

This module will help you understand:

- What unlearning really means
- Why it is essential for innovation
- How assumptions shape (and sometimes trap) our thinking
- How you, as a student, can practice unlearning in daily life

Innovation begins not when you add more information to your mind—but when you clear outdated thinking from it.

1. What Does “Unlearning” Actually Mean?

Unlearning is often misunderstood. Let’s clear that first.

Unlearning is NOT

- Erasing your memory
- Disrespecting teachers or textbooks
- Ignoring facts or scientific evidence

Unlearning IS:

- Questioning assumptions
- Updating beliefs when new evidence appears
- Recognizing that knowledge evolves
- Being comfortable with saying, “What if this isn’t the full picture?”

Think of your mind like a cupboard. Over time, it gets filled with ideas, rules, shortcuts, and habits. Some of them are useful. Some are outdated.

Some were never correct in the first place. If the cupboard is too full, nothing new can fit.

Unlearning is the act of **opening that cupboard, checking what’s inside, and deciding what still serves you.**

In science, this process happens all the time. Scientific knowledge grows because scientists constantly test, revise, and sometimes discard earlier explanations. What makes a good scientist—or an innovator—is not how much they know, but how willing they are to revise what they know.

2. The Hidden Power of Assumptions

At the heart of unlearning lies one powerful concept: **assumptions.**

An assumption is something we believe to be true without questioning it.



Examples

- “This is how it has always been done.”
- “This problem has only one correct solution.”
- “I’m not good at science.”
- “If something failed before, it will fail again.”

Assumptions are not always wrong. In fact, they help us function quickly in everyday life. But in innovation, **unquestioned assumptions are dangerous**. They quietly decide what we consider possible – and what we never even try.

For a long time, people assumed:

- Heavier objects fall faster than lighter ones
- Diseases were caused by bad air
- The Earth was the centre of the universe

These ideas felt logical. They were widely accepted. And they were wrong.

Innovation begins when someone asks:

“What if this assumption is incorrect – or incomplete?”

Learning to unlearn is learning to **spot assumptions hiding inside our thinking**.

3. Why the Brain Loves Old Ideas (and Fears New Ones)

Our brains are efficient machines. They love patterns, shortcuts, and familiarity. Once an idea works a few times, the brain says, “Great—let’s stick with this.”

This is helpful for survival—but not always for innovation.

Psychologists call this **mental fixation**: the tendency to stick to familiar solutions even when better ones exist. In exams, this may help you solve standard problems quickly. But in real-world challenges—climate change, water shortages, health issues—this kind of thinking fails.

Unlearning feels uncomfortable because

- It creates uncertainty
- It challenges our confidence
- It forces us to admit we might be wrong

But innovation lives exactly in this uncomfortable space.

Every time you feel confused or unsure while thinking about a problem, that is not a weakness—it is a signal **that learning and unlearning are happening together**.

4. Why Good Students Sometimes Struggle with Innovation

This may sound surprising, but students who always score well can sometimes struggle with innovation.

Why?

Because traditional education often rewards:

- Correct answers
- Speed
- Following known methods

innovation, on the other hand, requires:

- Asking unusual questions
- Exploring wrong paths
- Challenging instructions

A student trained only to look for “the right answer” may hesitate to explore unknown possibilities. They may fear being wrong. They may avoid questions that don’t have clear solutions.

Unlearning helps students move from:

- “What answer does the teacher want?”
to
- “What is really happening here?”

This shift is essential for scientific thinking.

5. Historical Lessons: Unlearning Changed Science

Science progresses not by collecting facts alone, but by replacing old explanations with better ones.

Here are a few simplified examples:

The Shape of the Earth

For centuries, it was assumed the Earth was flat. Observations slowly challenged this idea. People had to unlearn a belief that felt obvious.

Motion and Force

It was once believed that objects stop moving because they “run out of force.” This idea had to be unlearned before new laws of motion could be understood.

Health and Medicine

The assumption that diseases were caused by bad smells delayed medical progress for years. Unlearning this idea led to modern hygiene and medicine.

In each case, progress required courage – not just intelligence.

6. Unlearning in Everyday Student Life

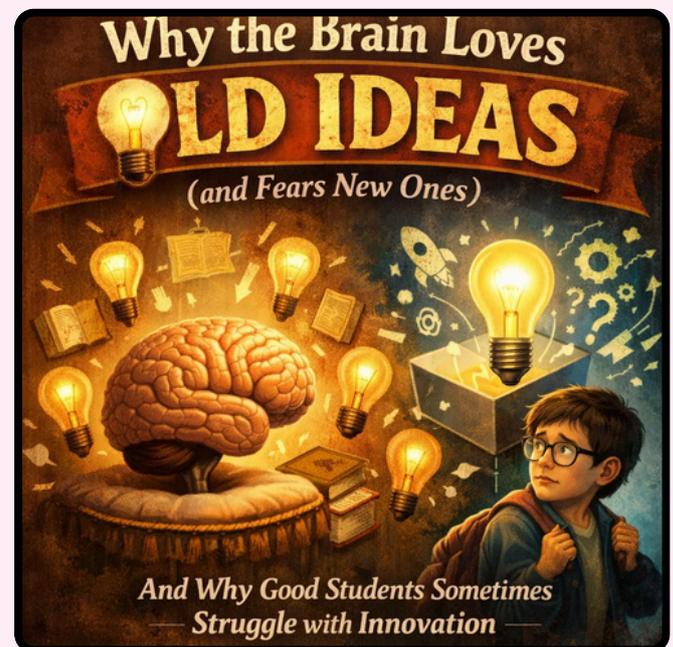
Unlearning is not only for scientists in laboratories. Students can practice it every day.

In the Classroom

- Question why a method works, not just how
- Ask if there could be another approach
- Explore “what if” questions

In Studying

- Replace memorization with understanding
- Challenge yourself to explain concepts in your own words
- Identify topics you believe you are “bad at”- and ask why



In Group Work

- Listen to ideas different from your own
- Notice when you reject ideas too quickly
- Ask: “Am I dismissing this because it’s wrong—or because it’s unfamiliar?”

Unlearning starts with awareness of **your own reactions.**

7. Exercises to Practice Unlearning

Exercise 1: Assumption Hunt

Pick a common object (a pen, a school bag, a classroom chair).

Ask:

- What assumptions do I have about this object?
- Why is it designed this way?
- What if one assumption changed?

Exercise 2: Reverse Thinking

Take a rule you are familiar with.

Example: "Homework must be written."

Ask:

- What if homework was explained verbally?
- What if learning was demonstrated, not written?

The goal is not to reject rules—but to see alternatives.

Exercise 3: "I Might Be Wrong"

Once a day, consciously say:

"I might be wrong about this."

This simple sentence opens the mind to new information.

8. Unlearning Before Innovation

Many people think innovation begins with ideas. In reality, innovation begins with clearing mental space.

Before you design a solution, ask:

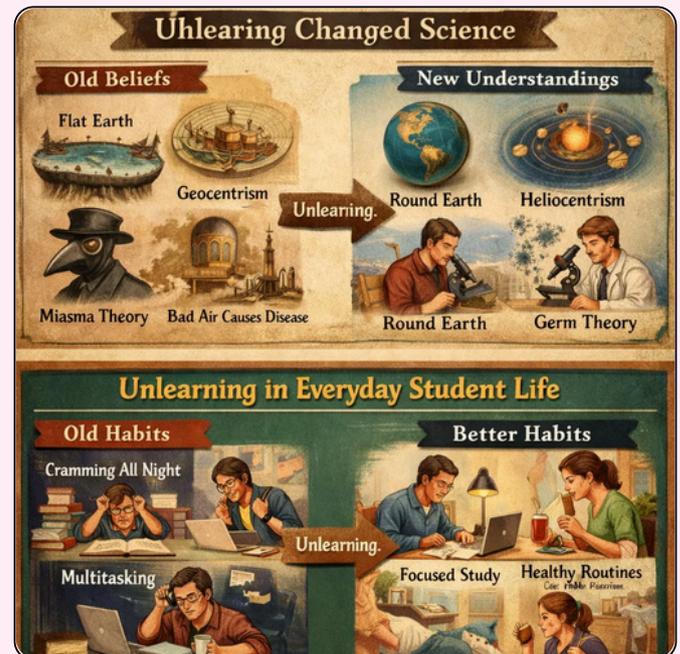
- What am I assuming about this problem?
- Who decided this rule?
- When was this idea last questioned?

Unlearning helps you avoid fixing symptoms instead of causes. It prevents you from repeating old mistakes with new tools.

A powerful innovation mindset follows this order:

1. **Observe,**
2. **Question,**
3. **Unlearn,**
4. **Relearn,**
5. **Experiment**

Skipping the unlearning step often leads to shallow solutions.



Conclusion: Innovation Begins by Letting Go

Learning fills the mind. Unlearning frees it.

Innovation is not about being smarter than others. It is about being **braver with your thinking**—brave enough to question, to doubt, and to update your understanding of the world.

As a young scientific mind, your task is not just to absorb knowledge, but to **keep your thinking flexible, curious, and alive.**

As a young scientific mind, your task is not just to absorb knowledge, but to keep your thinking flexible, curious, and alive.

Before you try to change the world, learn to unlearn the ideas that quietly limit how you see it.

That is where innovation truly begins.