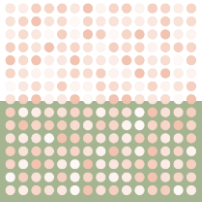
GLION SELF-HELP SERIES

Learning
Support



How do I learn and study effectively

We all have limited resources of mental energy and time: the key to successful studies is to use these limited resources wisely.

World renowned cognitive neuroscientist Stanislas Dehaene (2021) identifies 4 key aspects of effective learning:

Attention, **Active engagement**, **Feedback**, and **Consolidation**.

Reference: Dehaene, S. (2021). *How we learn*. Penguin

ATTENTION

To learn something, you must pay attention to it, you must focus fully on the information.

Multitasking is a myth.

The human brain is designed to focus on one thing at a time.

This means you should reduce other stimuli which may distract you – turn off your phone and email.

Close irrelevant web pages.

Try to be in a physical space which is as calm as possible.

The natural maximum attention span for a human is around 15-20 minutes.

If you try to concentrate for longer than this, your mind will inevitably start to wander.

However, after a short break your brain regains maximum concentration for a task, so you are ready to start again.

Because of this, you should organize your study sessions into hour long periods with short breaks every 20 minutes and a longer break at the end of each hour.

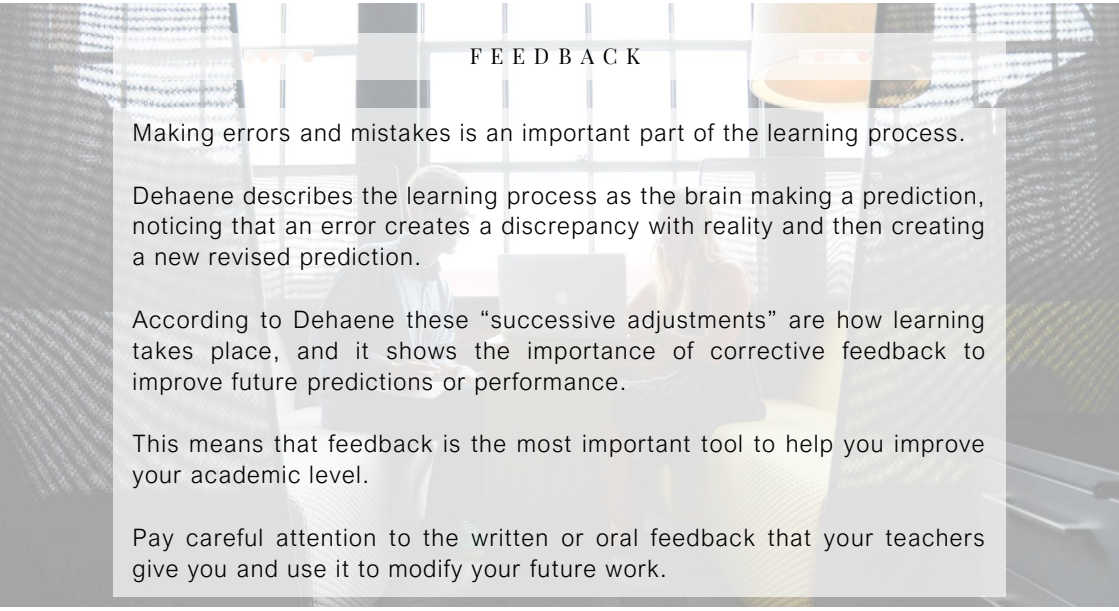
ACTIVE ENGAGEMENT

You will not learn by memorizing your teacher's lecture PowerPoint or by highlighting text in a course book.

To learn something, you must actively engage with the new information, you must "do" something with it.

What activities create active engagement?

Paraphrasing information, summarizing information, looking for comparisons and contrasts between what you already know and what you are trying to learn, trying to explain concepts to another student – these are always of thinking actively about new material, leading to deep learning.



FEEDBACK

Making errors and mistakes is an important part of the learning process.

Dehaene describes the learning process as the brain making a prediction, noticing that an error creates a discrepancy with reality and then creating a new revised prediction.

According to Dehaene these "successive adjustments" are how learning takes place, and it shows the importance of corrective feedback to improve future predictions or performance.

This means that feedback is the most important tool to help you improve your academic level.

Pay careful attention to the written or oral feedback that your teachers give you and use it to modify your future work.

CONSOLIDATION

Consolidation means transferring knowledge from your working short-term memory to your long-term memory in a stable robust way.

Repeated recall of information is the key to this process, meaning regular revision and practice of the material you need to learn in the weeks leading up to an assessment.

You should space out your revision sessions for maximum impact: you will learn more effectively if you study for one hour every week for three weeks, rather than a single three-hour session just before an assessment.

It may be surprising, but sleep is also an important part of the consolidation process.

Our brains are active while we sleep to consolidate memories and therefore learning.

Make sure you are getting sufficient sleep during periods of intense study.

LEARNING IS A SKILL: YOU CAN IMPROVE THROUGH THE RIGHT TYPE OF PRACTICE

Learning is a skill which means you can develop, improve.

Regular study will enable you can become a better learner, more effective (learn more) and more efficient (waste less time and effort).

However, for this to happen you need to study in the correct way, taking advantage of what we know about the brain and memory works.

STUDY TECHNIQUES THAT LEAD TO EFFECTIVE LEARNING

1- Space out practice.

We have all had that experience of reading our notes during a long revision session just before an exam (cramming) and then not being able to recall anything we have learned a week after the exam.

You may pass an exam by cramming but in the long term, it is a waste of your time and effort:

You lose the learning you gained for the exam so you cannot apply it in future situations; you do not take advantage of the fact that the more knowledge you already have, the easier future learning becomes.

Imagine you allocate five hours of study time to revise for an exam: you will learn more if you schedule five one-hour sessions spaced out over several weeks rather than a single five-hour-long session the day before the exam.

2- Include regular breaks.

The amount of time you can concentrate or focus on something depends on many factors, but research shows that organizing your study sessions into short periods of concentration (20 – 50 minutes) is interspersed with regular short breaks (5-10minutes) leads to the most efficient learning.

3- Switch between topics, and courses.

By spacing out your practice, this also allows you to allocate your sessions to different courses or different topics within a course.

By changing the focus of your study regularly, you will improve your ability to transfer learning from one situation and to apply it successfully in another.

4- Retrieve knowledge.

Recalling facts or concepts from memory is a more effective learning strategy than reviewing by re- reading.

The neural pathways that make up a body of knowledge get stronger when the memory is retrieved and then applied.

Recalling what you have learned reconsolidates your memory, strengthens the connections to what you already know, and makes future recall easier.

5- Read actively.

Re-reading notes or highlighting text are inefficient study techniques.

You need to think about the information to learn it.

While reading, convert main points of text into a series of questions and then try to answer them at the end of your study session.

Define key concepts and use them in paragraphs.

Paraphrase the main ideas into your own words as you read.

Look for examples from outside the text.

Relate the main ideas to what you already know (from previous classes, from other courses, from experience).

6- Elaborate.

Learning is stronger when it is personal and when it matters to you.

Make the material you want to learn meaningful to you by expressing it in your own words (paraphrasing) and by connecting it with what you already know.

Learn to extract key points, organize them into a mental or conceptual model, and then integrate that model into your existing knowledge.

Look for underlying patterns principles or rules that link different concepts or contexts.

This whole process is of actively integrating new information into your existing knowledge is called *Elaboration*.

7- Solve problems.

Making mistakes and correcting them builds bridges to advanced learning.

Work through end-of-chapter questions and problems if you have a course book.

8- Vary your study techniques.

Use different techniques: paraphrasing, elaborating, answering questions, and so on.

Varied practice improves your ability to transfer learning from one situation and apply it successfully in another.

9- Test yourself regularly.

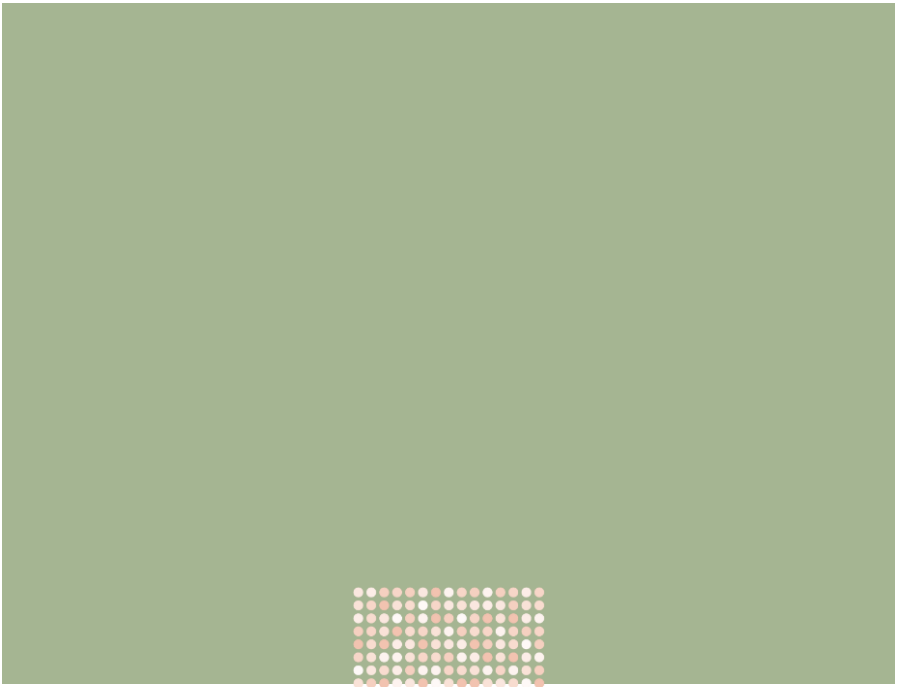
You build up mastery when you use testing as a tool to identify and bring up areas of weakness, showing you want you still need to work on.

Repeated self-testing makes learning more durable, more easily accessed, and easier to apply in a variety of situations.

It protects you from forgetting.

10- Teach!

If you can explain something to a fellow student so that they understand it, then you really know you have learnt it well!



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