

5 HABITS OF AN EFFECTIVE learner

*How the science of learning
can improve your revision
and reduce stress.*

Retrieval Practice

Questioning & Elaboration

Concrete Examples

Spaced Practice

Interleaving



Notes

Retrieval Practice

Retrieval practice means trying to remember material you have learned as opposed to re-reading it. Two of the least effective ways of studying are reading over stuff and highlighting it, which are also two of the most common things students do when revising.

Reading over material and highlighting it can give a false sense of mastery and make you think you have learned it when in reality, you will often forget that material a week later.



A far more effective technique is to put everything away and test yourself on what you remember from a particular unit or chapter. By regularly making yourself try to retrieve it from memory, you will build a far stronger memory of it in the long term.

STEP 1 Make a list of all the important information you need to know from a particular unit or chapter.

STEP 2 Close the books and create a quiz using flashcards or app.

STEP 3 Try to retrieve everything you remember.

STEP 4 Go back and check all your answers.

It's important to remember to space out your learning and not only do this once. Repeated exposure to learned material helps you to retain it better.

Retrieval Practice: paradoxically, forgetting leads to better remembering

Questioning and Elaboration

So now you have learned a lot of material, what should you do with it? Two of the most effective things you can do is to ask questions of what you have learned and then try to find connections between new ideas and concepts.

So for example, let's say you have learned a lot of material about World War II. Instead of asking when did this happen, ask yourself why did this happen? Or how did this happen? You can do this on your own or in pairs or even in a study group. The more information you have about a topic, the richer the conversation will be.



Another example. Let's say you have learned some quotes from Macbeth such as the dagger scene:

*Is this a dagger which I see before me,
The handle toward my hand?*

Once you have learned quotes like these, you might then move to asking yourself the following questions:

- ❶ Why does Shakespeare use this imagery here?
- ❷ What does this reveal about Macbeth at this part of the play?
- ❸ How does this connect with what we know with Macbeth at other stages in the play?

By elaborating on what you have already learned, you will be able to establish new links and ideas and create a far richer mental model of the topic you are studying and will be far better prepared for answering more open exam questions. As Professor Dan Willingham reminds us, "*Understanding is remembering in disguise.*"

Concrete Examples

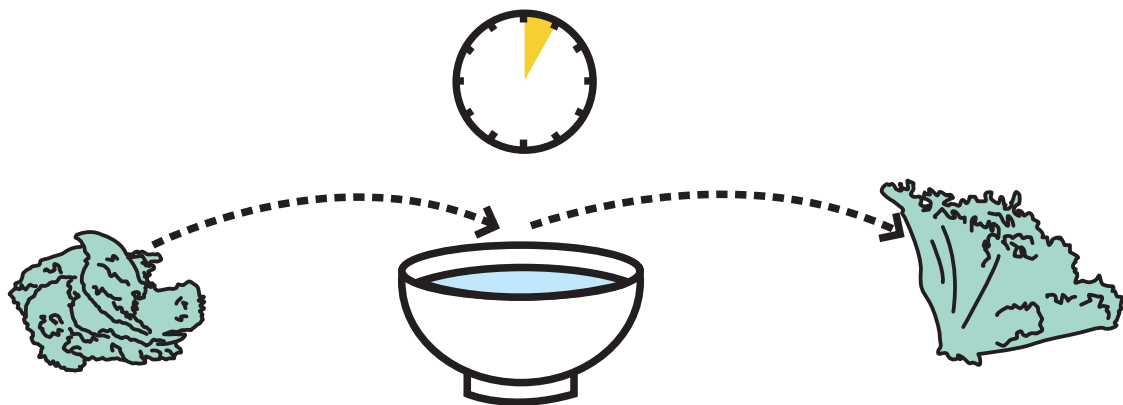
Learning abstract concepts or 'big ideas' is all well and good but often we struggle to relate them to other things. By using concrete examples, you will be able to create a much stronger representation of that concept and be able to use it in a range of situations.

So you have learned lots of material, you have asked important questions about that material and elaborated on its wider implications but what do you do next? Does this always transfer into exam results? Not always. Having lots of information and ideas swirling around your head doesn't always mean you can get it down in an exam in a way that will succeed.

One of the most effective things you can do is to get concrete examples of abstract ideas you have learned in class. For example,

Osmosis

Water moves from where there is a high water potential (a lot of free water and a low concentration of solute) to an area of low water potential (little free water and a high concentration of a solute).



Another useful way to use concrete examples is to study the best possible example of the thing you are trying to do, such as writing an essay.

It's very difficult to be excellent if you don't know what excellence looks like.

By evaluating an A or A* essay and taking it apart or 'reverse engineering it' you will begin to learn how to put together all the information you have learned with the bigger concepts and ideas that underpin it. Ask yourself:

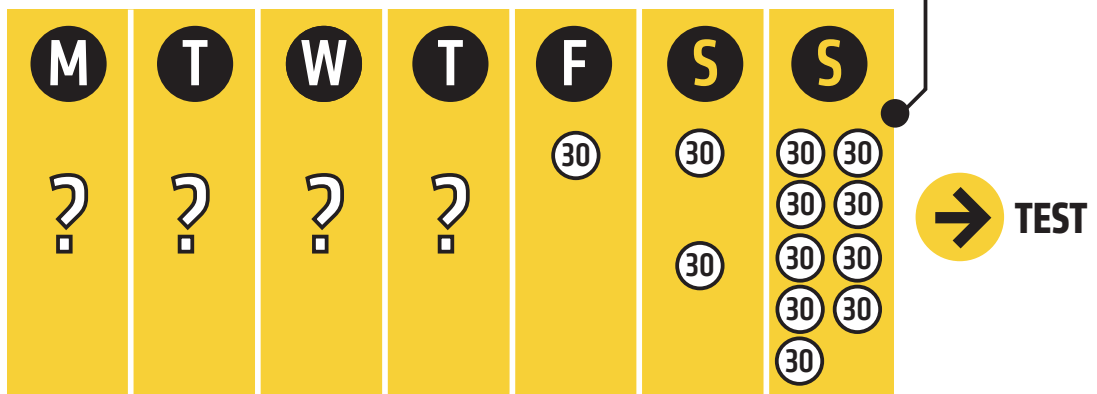
- ❶ How have they structured the essay?
- ❷ What particular phrases have they used to discuss their ideas?
- ❸ What specific examples have they used as evidence to support their arguments?

Spaced Practice

Procrastination is part of human nature. Simply put, the human brain doesn't want to have to think hard and will take all kinds of shortcuts in order to avoid it. This usually results in putting things off until you have no other option but to do it last minute. By spacing out your revision in smaller chunks over a period of time, you will remember that material far better and will also be a lot less stressed.

Putting off the work is a lot harder than doing the work.

Let's say you have a test one week and you have 5 hours to prepare for it broken down into 30 minute chunks. Very often that process looks like this.



We call this process *mass practice* or cramming, and it's one of the least effective ways of learning anything. It may get you through the exam but most of the material is quickly forgotten.

It also tends to make people very stressed and unable to work properly.

If, for example, you do this for a mock exam in March, it's highly likely you will not retain any of what you have learned by June and will have to do the whole process again.

Instead of mass practice, a much more effective way of revising is to space out your revision like this:



By breaking up your revision into 30 minute chunks and spacing out the time between revision, you will consolidate what you have learned and retain the material much more effectively.

Space out your revision: little and often is much more effective than all at once.

Interleaving

As we have seen with spaced practice, leaving gaps between studying is very effective but what if you are studying multiple topics within a subject? Interleaving means mixing it up and not studying all the material at once.

For example, instead of organising your revision week like this:

M	T	W	T	F
MACBETH	AN INSPECTOR CALLS	CREATIVE WRITING	UNSEEN POETRY	JEKYLL AND HYDE
MACBETH	AN INSPECTOR CALLS	CREATIVE WRITING	UNSEEN POETRY	JEKYLL AND HYDE
MACBETH	AN INSPECTOR CALLS	CREATIVE WRITING	UNSEEN POETRY	JEKYLL AND HYDE

A much more effective way of organising your revision would be like this:

M	T	W	T	F
MACBETH	UNSEEN POETRY	AN INSPECTOR CALLS	JEKYLL AND HYDE	CREATIVE WRITING
AN INSPECTOR CALLS	JEKYLL AND HYDE	CREATIVE WRITING	MACBETH	UNSEEN POETRY
CREATIVE WRITING	MACBETH	UNSEEN POETRY	AN INSPECTOR CALLS	JEKYLL AND HYDE

As you are doing this, another highly effective strategy is to try to think of connections between topics you are studying considering similarities and differences.

Studying one topic for a long time can give them impression you have mastered it but often this can be misleading.

By mixing up or 'interleaving' what you revise and when, you will remember that material far more effectively simply due to the fact that you will have to revisit that material multiple times with more gaps in between.

Notes