

Insider tips to learn effectively

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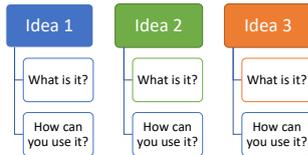
Mon 18th Sept 2023 (4-5pm)

Learning Effectively through Active Learning

Active learning is a key feature of university study, but what does it look like in practice? In this session, we'll share ideas for how you can turn passive learning into active learning and get the most out of lectures and readings. Using effective strategies enables you to remember more (with less time invested) and get better marks.

How to remember today's session

- Take notes
- I will ask you at the end



Here's what I'd like you to do during our session today.

At the end, I'll ask you what you remember.

Why do some students learn better than others?

1. They are smarter.
2. They use better strategies.
3. They come from better schools.

✓ Insider tip:
Use good strategies



Where to get strategies

- *Six Strategies for Effective Learning* by Yana Weinstein, Megan Smith, & Oliver Caviglioli
<http://www.learningscientists.org>

- See our handout for more



We are using some of the six strategies for effective learning by the Learning Scientists. More good sources are included in the handout we will give you at the end of today's session.

Strategies work with mindset

These students do better!

Fixed

- Learning is easy or hard, depending on innate abilities
- You can't change achievement
- You learn best in subjects that feel easy
- Avoid challenge

Growth

- Learning is often hard
- You can improve achievement with effort and good methods
- You can learn well, even in subjects that feel difficult
- Embrace challenge

But why are strategies important?

Strategies work with mindset. Here are two kinds of mindset.

People who have a fixed mindset....

People who have a growth mindset...

Which ones do you think learn better?

Growth mindset formula for success

✓ Insider tip: Embrace challenge, if it feels hard, that means it's working!

Follow a bad strategy and you might not learn – no matter how hard you try.

Avoid the easy path – you need to stretch yourself – so if you find things difficult, don't resort to just doing easy problems or nothing.

Identify what you know and understand and what you don't and then work to build your knowledge from that point.

The weight lifter has to lift weights to build muscle – the student has to practice to build brain muscle.

Which have you experienced?

Let's take a step back.

Have you experienced this? The picture on the left shows passive learning. The picture on the right shows active learning – thinking, questioning, reading, writing, doing tasks.

Active learning at university

- Your lecturers use active learning
- They want you to engage in your own learning process
- But...what does that look like?

What university teachers expect you to do

- Attend class and pay attention
- Participate and contribute
- Think critically about the material
- Prepare before class, revise afterwards

Here are some active learning things your teachers expect you to do.

Definitions of active learning

Students do not learn much just by sitting in classes listening to teachers, memorizing pre-packaged assignments, and spitting out answers. They must **talk** about what they are learning, **write** about it, relate it to past experiences, **apply** it to their daily lives. – Chickering & Gamson

doing things and **thinking** about what they are doing – Bonwell & Eison

See the other handout for details.

Create an

Active Cognitive Task

(thinking task)



✓ Insider tip – Top achievers are already doing this for themselves. You can too!

This is Mary Jacob’s contribution to the literature around active learning.

The key is in the thinking part of the task.

What do you normally do during lecture in order to learn better?




Which strategies do you normally use while reading an article or book?




Some ways to create a thinking task

<p>Attend lecture or watch video</p> <ul style="list-style-type: none"> Define key terms in your own words Find real-world examples Devise questions for quizzing later 	<p>Read an article or book</p> <ul style="list-style-type: none"> Evaluate the argument to see if evidence supports conclusions Think of ways to apply the new ideas in practice Relate the new theory to ones you have already learned
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Here are some ideas to get you started with design your own thinking tasks.

You may think of more!

Practice recalling from memory

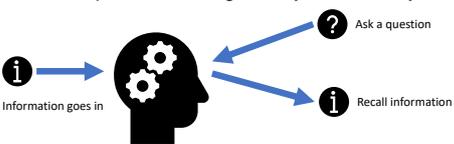
Space it out and mix it up!

These tips are from the Learning Scientists



Now we will talk about three linked strategies from the Learning Scientists.

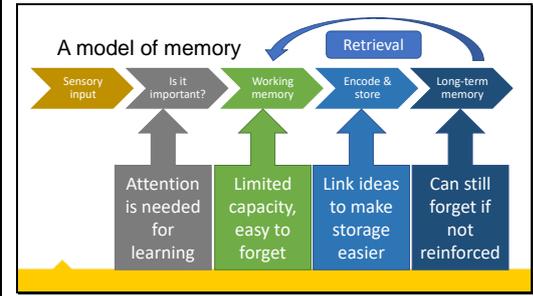
Retrieval practice strengthens your memory



✓ Insider tip: Practice recalling from memory

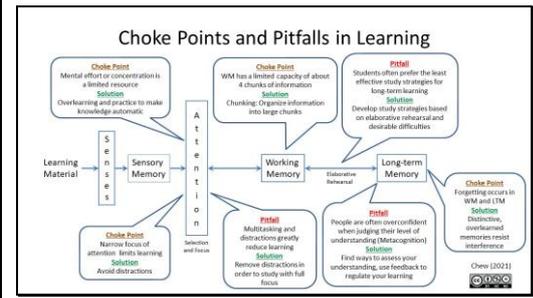
Recalling from memory – known as retrieval practice – strengthens your memory and helps you learn. Information goes in through your senses when you hear, see, do or read something. It gets encoded and stored. When you try to answer a question, this triggers recall. Each time you do it, you strengthen your ability to remember and use that information

later. The brain works like a muscle, it gets stronger the more you use it.



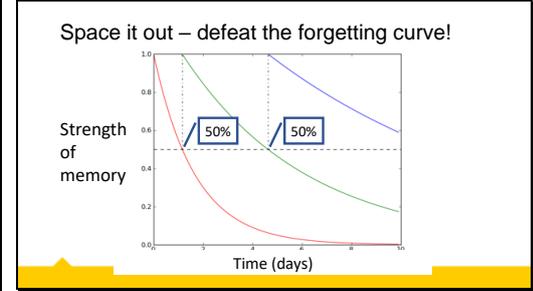
Here is a more detailed look at how memory works.

Each time you retrieve that information, it gets encoded and stored again. Eventually, the knowledge become automatic. That's why retrieval practice is so important for learning.



This diagram is a bit more detailed than the previous one. It shows choke points and pitfalls we should avoid. Pitfalls are decisions students make. Choke points are limitations of the way our brains work.

After today's session, please have a close look at the picture, which appears in our handout.



Ebbinghaus forgetting curve – most of the forgetting occurs in first 20 minutes after learning new material

The vertical axis shows strength of memory, where 1 means we remember everything and 0 means we remember nothing. Soon after learning, we feel as if we remember it all, but that drops very quickly. We have forgotten half of it within the first day.

Revisit the material within a day and do retrieval practice then will boost your memory back up to 100%. Now the curve flattens and it takes longer before your forget half of it. Keep boosting at intervals and you will eventually learn it well so that you can use the new knowledge later. That is our aim.

See our handout Ebbinghaus, Hermann. Translated by Henry A. Ruger & Clara E. Bussenius. Memory: a contribution to experimental psychology (New York: Teachers College, Columbia University, 1913). <http://psychclassics.yorku.ca/Ebbinghaus/index.htm>

✓ Insider tip:
Practice right after learning and repeat!

Recall from memory, don't just re-read

Test and relearn about every three weeks

Ebbinghaus forgetting curve – most of the forgetting occurs in first 20 minutes after learning new material

The curve of forgetting and the distribution of practice Journal of educational psychology [0022-0663] Easley vol:28 iss:6 pg:474 -478

Ebbinghaus, Hermann. Translated by Henry A. Ruger & Clara E. Bussenius. *Memory: a contribution to experimental psychology* (New York: Teachers College, Columbia University, 1913).
<http://psychclassics.yorku.ca/Ebbinghaus/index.htm>

Mix it up – use interleaved practice

Session 1	Topic A	Topic B	Topic C
Session 2	Topic B	Topic A	Topic C
Session 3	Topic C	Topic B	Topic A
Session 4	Topic B	Topic C	Topic A

- Change the sequence each time
- Avoid 'blocked practice' – study other topics in between!

Here are two ways to study: interleaved and blocked.

Two ways to study

<p>Blocked study</p> <ul style="list-style-type: none"> • Study one topic until you feel mastery, then move to next • Feels easier, but... • Remember less • Forget easily over time 	<p>These students do better!</p> <p>Interleaved study</p> <ul style="list-style-type: none"> • Mix up the topics in one session and across sessions • Feels harder, but... • Remember more • Retain more over time
<p>✓ Insider tip: Interleave your practice</p>	

Which students do you think do better?

Flashcards

- Create soon after learning
- Answers on the back
- Answer from memory, then check
- Do with a study partner
- Revisit every 3 weeks
- Keep the 'learned' ones in the pack



✓ Insider tip: Use retrieval, not just recognition

Flashcards are a way to use these strategies, but there are some insider tips to getting the most from them.

Don't put all of the information on the same side of the card, because then you will be re-reading, not retrieving. For the same reason, don't look at one side and then the other. Look at one side, try to retrieve the information, and only then flip it over to check. Go in both directions.

It's easy to get a false feeling of learning, so keep the learned ones in the pack and keep revisiting the cards later on. This will help you defeat the forgetting curve!

Flashcard example 1

<p>命運 Mìngyùn</p>	<p>Destiny, fate</p>
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Here is an example to show how you can use flashcards for retrieval.

If you are learning Chinese, you could put the Chinese character and pronunciation on one side, the definition on the other. Go in both directions - Look at the Chinese and recall the definition. Look at the definition and either write or say the word.

Flashcard example 2

The same principle works for science subjects.

Look at the word 'monocot' and recall the characteristics of a monocot. Flip the card over to check if you got them right or missed anything. Go in the other direction – look at the characteristics and try to recall the word.

You will be amazed at how much this helps you remember, compared to just re-reading.

What students say about flashcards

It has made studying more enjoyable and less stressful

At last! I'm learning ... and very effectively

Learning is so much easier it feels like cheating

Here are some real quotes from Aberystwyth students in the Life Sciences department when their lecturer had them use flashcards.

Make learning effective and fun!

✓ Insider Tip: Practice questions with partners

I highly recommend that you find ways to practice with partners, whether it is with flashcards or other types of study.

You can practice retrieving information, or practice analysing readings critically – e.g. What was the main point of the article we read? What evidence supported it? How persuasive was the argument and why? How does this connect with other readings we have done? Etc.

Create your own active cognitive tasks (thinking task)!

How can you use these strategies?
Think and share

- Think 1 minute
- Share via Q&A

What do you remember from this session?

Join at:
vevox.app
ID:
112-678-739

What will you do differently to study now?



I hope you will use these insider tips to learn well!
Enjoy your time on our friendly and supportive campus and in our beautiful seaside town 😊.