# Insider Tips to Learn Effectively - resources

References collected by Mary Jacob, Learning & Teaching Enhancement Unit, 9/8/2023
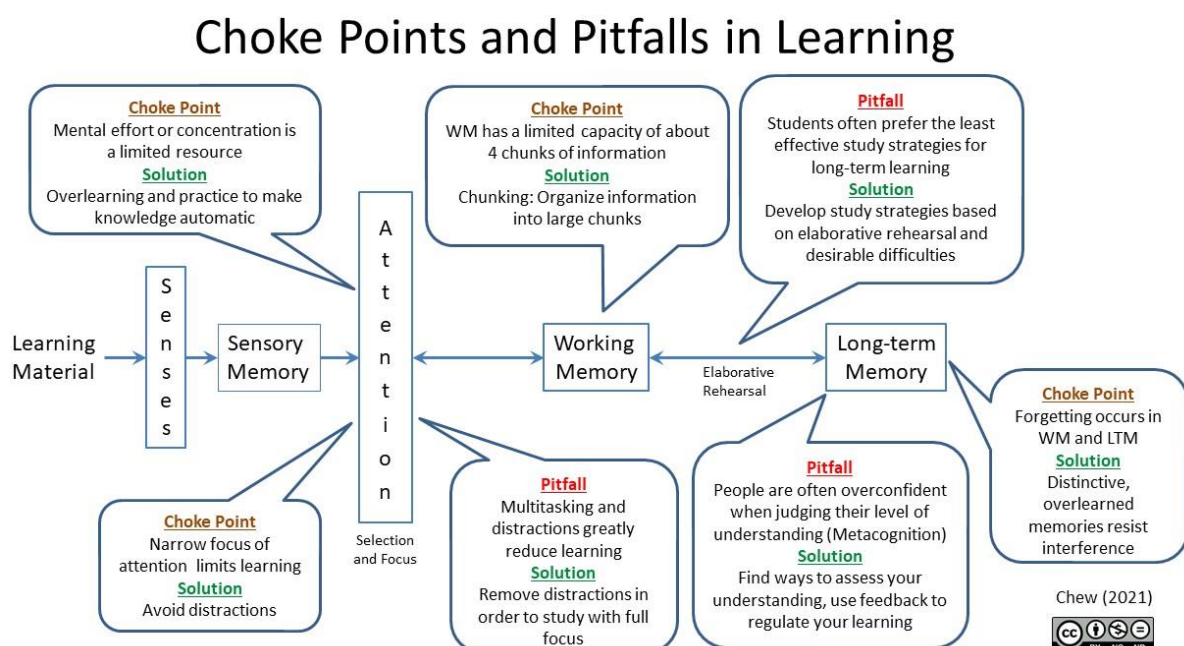
## Core concepts

- Growth mindset formula for success
  - Right strategy, guidance, and effort
- Practice
  - Recall information (retrieval is better than recognition practice)
  - Space it out (defeat the forgetting curve)
  - Mix it up (interleaved is better than blocked practice)
  - Flash cards and self-quizzing help you remember, study with a partner
- What lecturers want you to do:
  - Come to class and pay attention
  - Participate and contribute
  - Think critically about the material
  - Prepare before class, revise afterwards
- Turn passive into active learning using ACTs (active cognitive tasks)
  - Do a thinking task in class, while watching videos, or reading

## Where to find strategies

- Agarwal, P. **Make flashcards more powerful with these 3 tips**, *Retrieval Practice*.
- Learning Scientists, **Six Strategies for Effective Learning**.

## Choke points and pitfalls

- Chew, S. L. (2021). **An Advance Organizer for Student Learning: Choke Points and Pitfalls in Studying**. *Canadian Psychology/Psychologie canadienne*. Advance online publication.

# Choke Points and Pitfalls in Learning



**Choke Point**
Mental effort or concentration is a limited resource
**Solution**
Overlearning and practice to make knowledge automatic

**Choke Point**
WM has a limited capacity of about 4 chunks of information
**Solution**
Chunking: Organize information into large chunks

**Pitfall**
Students often prefer the least effective study strategies for long-term learning
**Solution**
Develop study strategies based on elaborative rehearsal and desirable difficulties

Learning Material → Senses → Sensory Memory → Attention → Working Memory ← Elaborative Rehearsal → Long-term Memory

**Choke Point**
Narrow focus of attention limits learning
**Solution**
Avoid distractions

Selection and Focus

**Pitfall**
Multitasking and distractions greatly reduce learning
**Solution**
Remove distractions in order to study with full focus

**Pitfall**
People are often overconfident when judging their level of understanding (Metacognition)
**Solution**
Find ways to assess your understanding, use feedback to regulate your learning

**Choke Point**
Forgetting occurs in WM and LTM
**Solution**
Distinctive, overlearned memories resist interference

Chew (2021)

# References and further reading

Here are the sources I used and other useful readings.

- Bonwell, C. C., & Eison, J. A. (1991). *Active learning: Creating excitement in the classroom*. Washington, DC: School of Education and Human Development, George Washington University.
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- Center for Educational Innovation (2018). **What is Active Learning?** (2-minute video), University of Minnesota
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- Ebbinghaus, H. (1913). *Memory: A contribution to experimental psychology*; translated by Henry A. Ruger and Clara E. Bussenius. Teachers College, Columbia University.
- Evans, G. (2022). **How I Take Notes (at Law School) - The SOAR Framework** (9-minute video, includes both Cornell and SOAR method)
- Goodnotes. **Cornell Note-taking – the best way to take notes, explained**, *Medium.com*
- Kornell (2009). **Optimising learning using flashcards: Spacing is more effective than cramming**. *Applied Cognitive Psychology* 23: 1297-1317.
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- Rawson, K. A., Dunlosky, J., & Sciartelli, S. M. (2013). **The power of successive relearning: Improving performance on course exams and long-term retention**. *Educational Psychology Review*, 25, 523–548.
- Roediger, H. L., Putnam, A. L., & Smith, M. A. (2011). **Ten Benefits of Testing and Their Applications to Educational Practice**. *The Psychology of Learning and Motivation, 55,* 1-36.
- Rohrer, D. (2012). **Interleaving helps students distinguish among similar concepts**. *Educational Psychology Review, 24*, 355-367.
- Vincent, D. (2019). **Learning to learn: Flash cards, spaced repetition and example sentences**, *World of Better Learning, Cambridge University Press & Assessment*