UNIVERSITY OF AMSTERDAM
Economics & Business

Active learning

This infographic provides a recap Paul Kirschner's Keynote presentation on active learning from the EB TLC Conference on the 11th of May.

What constitutes good education?

Effective (result)	Efficient (investment)	Enjoyable (satisfying)

These three elements depend on
1) how students study, and
2) how teachers teach.

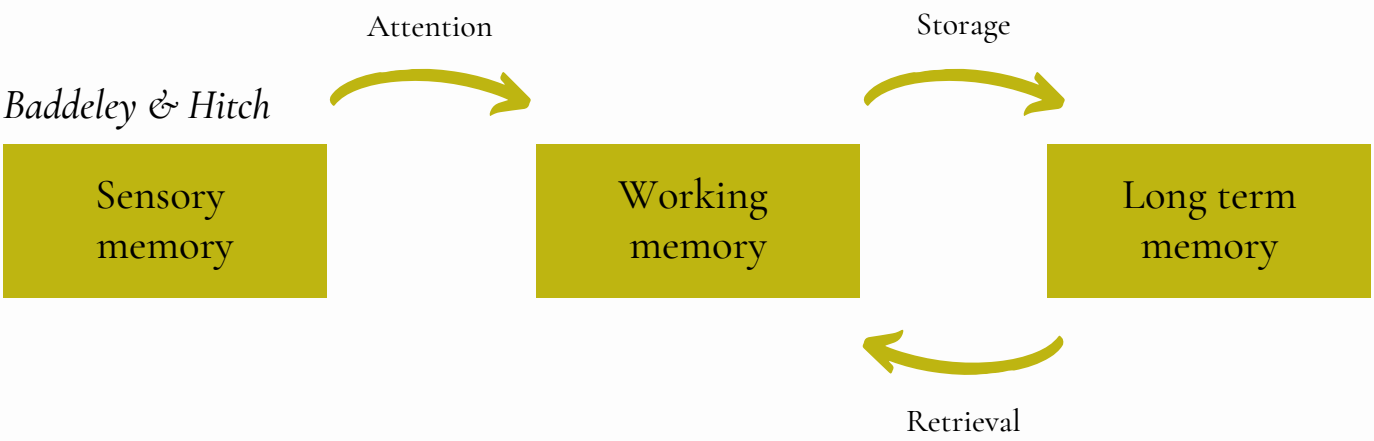
Learning should not simply lead to a good exam grade; learning should be a change in long term memory.

Poor proxies for how much students are learning:

- How much work students get done
- How engaged and motivated students are
- Whether students are getting enough attention in the forms of feedback and explanations

How can learning occur?

In order for students to learn and retain the acquired knowledge in their long term memory, the information that comes into the sensory memory needs to be processed in the working memory and subsequently continuously retrieved from the long term memory:



When information is processed more deeply, you learn more deeply. This is not merely about bringing the information into long term memory, but also about continuously retrieving it.

Learning = storing + retrieving

Learning is a generative activity, it about sense making: transforming the information into something meaningful. It is always an active process.

Learning can be improved through instruction and learning/study strategies.

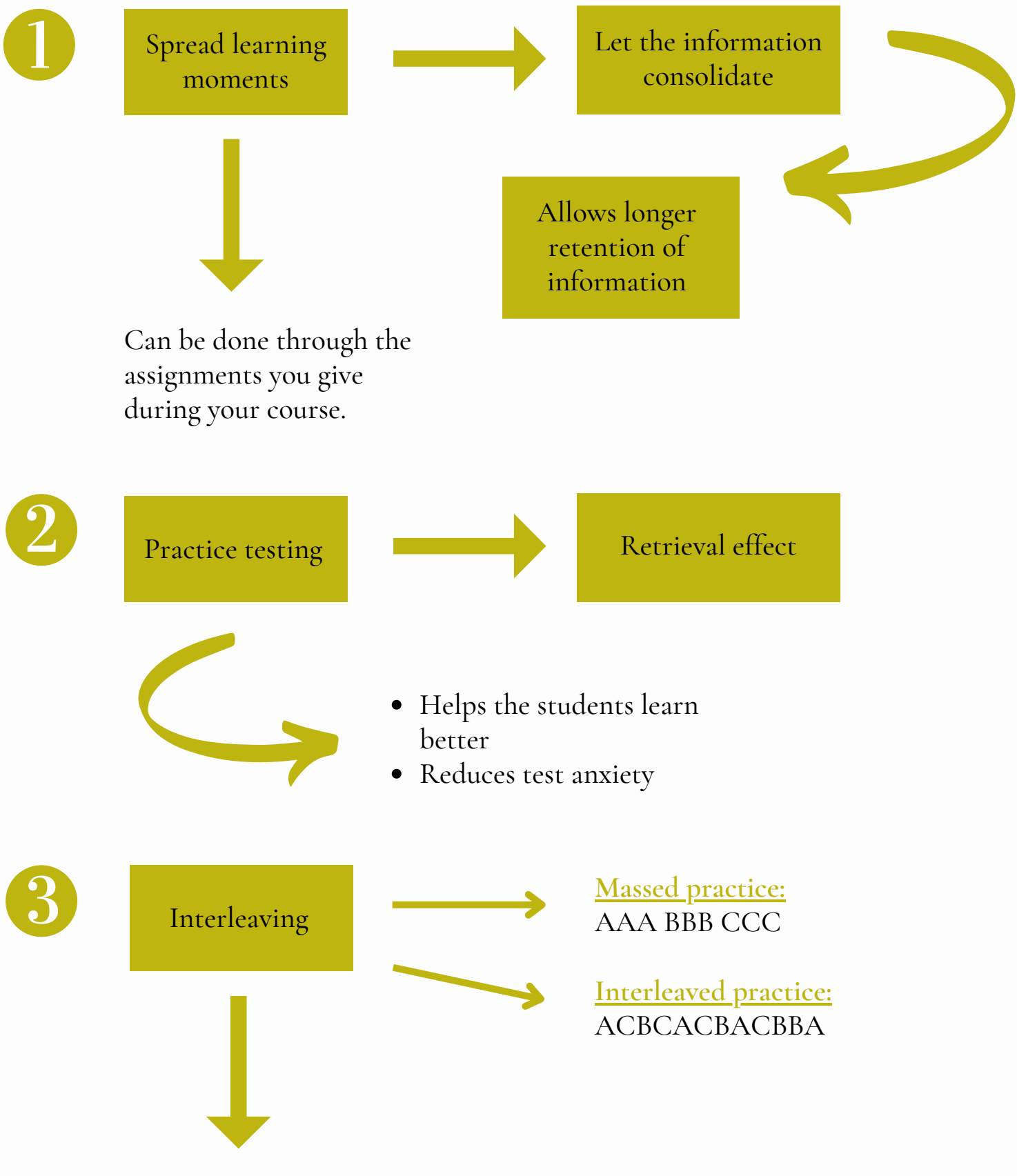
Research* has shown that out of various study strategies, only two techniques are considered good for different types of learners, materials, and tasks:

- Practice testing
- Distributed practice

= *a schedule of practice over time*

Desirable difficulties

= a learning task or study strategy that requires a considerable but desirable amount of effort, thereby improving long-term performance.



* Dunlosky, J., Rawson, K. A., Marsh, E. J., Nathan, M. J., & Willingham, D. T. (2013). Improving students' learning with effective learning techniques: Promising directions from cognitive and educational psychology. *Psychological Science in the Public Interest, 14*, 4-58.