Online Learning

Memory & Learning
Prepared by: *Aura Pop*.

Overview: "Learning and memory are two sides of the same coin" (Lieberman, 2012, p.289). Memory is a necessary component of learning; it supports our ability to develop and enhance our skills and knowledge. We acquire new information, then we store that information until we are required to retrieve it (e.g., during an exam). The learning techniques that feel the most intuitive to us are often not the most effective at preparing us for exams. Rereading, underlining or highlighting and note taking are three popular techniques preferred by students (Miyatsu, Nguyen, & McDaniel, 2018). However, all have common pitfalls that are not optimal for learning. Not testing yourself after reading, underlining too little or too much, and taking notes verbatim are not the most effective learning strategies available. Research shows that **generating questions on information we are learning** (Ebersbach, Feierabend, & Nazari, 2020) **and testing our memory of the information** (Karpicke, 2012) **are the most effective learning tools**. Rereading, underlying and making notes can make us mistake knowledge for the familiarity of the content. Testing your knowledge is good at determining what we know and what we don't, which can point out the areas that need more focus.

Scheduling study periods over longer periods of time is more effective than studying all the information before the exam. Spacing study or practice provides time to enhance memory through reprocessing, leading to better retention of information and skill (Hopkins, Lyle, Hieb, & Ralston, 2016; McDaniel, Fadler, & Pashler, 2013; Smith & Scarf, 2017). Students are now more likely to be in an asynchronous course than before the pandemic, meaning that scheduling frequent learning periods throughout the semester is important for success.

Want to improve memory and test performance? How to use your time most effectively.

- Generate your own questions based on the material.

- Test your knowledge of material above rereading, underling or highlighting, and making notes.

- Revise regularly rather than bulk studying everything at once; schedule shorter periods of study or practice into your weekly routine.

Want to learn more?

Ebersbach, M., Feierabend, M., & Nazari, K. B. B. (2020). Comparing the effects of generating questions, testing, and restudying on students' long-term recall in university learning. *Applied Cognitive Psychology, 34*(3), 724–736. https://doi.org/10.1002/acp.3639