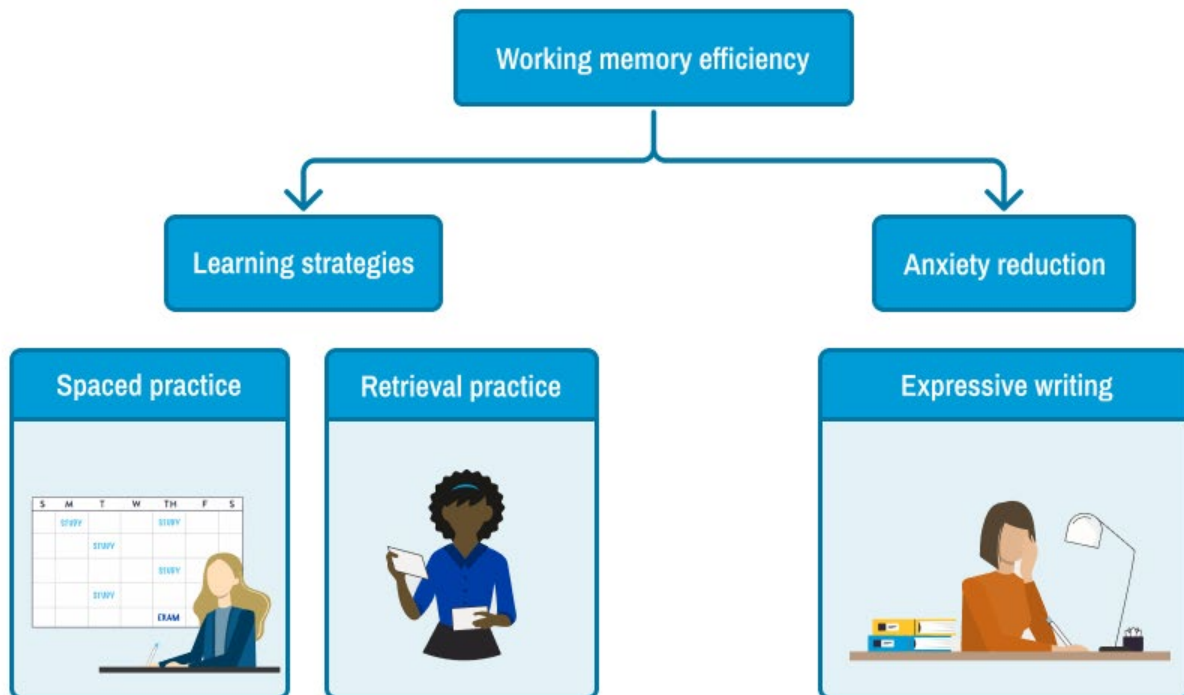




As we learn, information travels through [working memory](#) and into long-term memory where it is stored as a series of [facts and relationships](#). To apply medical knowledge, clinicians need to have a solid foundation of both facts and the relationships between these facts, but the [resources](#) used to learn (and re-learn) facts are different than those needed to learn relationships. Learners can use [metacognitive strategies](#) to determine the type of resource they need for different content.



Two effective and efficient strategies for learners to acquire any knowledge are [spaced practice](#) and [retrieval practice](#). Spaced practice involves spreading out review of information over time. This can occur within a single study session or across many different sessions. Retrieval practice involves bringing information to mind, which strengthens and reorganizes memory. These two strategies can be combined to maximize long-term retention.

Using effective strategies is one way to utilize working memory more efficiently, but unfortunately, there are many external factors that can take up space in working memory (for example, test anxiety). The impact of external factors on working memory can be temporarily reduced through [expressive writing](#). When individuals offload their thoughts through writing, they open up working memory space allowing for those resources to be used for retrieval, problem solving, and critical thinking.

This CEDAR Conclusion! was developed by Cindy Nebel, PhD, Aric W. Hamilton, BA, and Kristina Dzara, PhD, MMSc, as a durable education resource for our CEDAR Community.

Have colleagues or trainees who would benefit from a session on Study Strategies? Email [CEDAR@health.slu.edu](mailto:CEDAR@health.slu.edu) to request.