



Center for Learning and Innovation in Medical Education ([CLIME](#))

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Evidence based practices in alignment with learning theory, the science of learning, and curriculum development support the effective instruction of adult learners. Guiding principles include:

Share Clear Learning Objectives: [Learning objectives](#) clarify purpose and intended outcome, support students in understanding what is important, and facilitate objective and effective evaluation.

Be Transparent with Learners: Let your learners know [why the topic matters](#). This helps inspire learners internal motivation and supports professional identity.

Move Past The Lecture: Purposefully use in-class time. Limit top-down delivery and [support collaborative learning](#). Chunk “lectures” to 8 minutes or less to continually re-engage your learners.

Design for Learner Engagement: Implement group [learning activities](#), including opportunities to engage with or even develop course material. Embrace your role as a guide to and ally for learning.

Support Retrieval Practice: Intentionally create opportunities to [retrieve previously learned information](#). Encourage the application of prior concepts to new learning, and help circumvent the “forgetting curve.”

Build in Time to Think: Give learners time to think and process. [Build in time to think](#) before a session to focus attention, during a session to refocus attention, or after a session to capture learning.

Reduce Cognitive Load: Pay attention to [intrinsic, germane, and extraneous](#) load. Learning is cognitively overloading. Focus on improving germane load, which is devoted to processing information and constructing and schemas. Reduce extraneous load by ensuring slides and other learning materials are as streamlined and relevant as possible.

Offer Educational Scaffolds: Provide students with opportunities to organize their new learning. Prepare [advanced organizers](#) to scaffold thought processes. Encourage categorization, classification, compare and contrast, or backwards construction.

Encourage Evidence-Based Study Practices: Using [evidence-based study practices](#) will result in deeper learning. Support students in spacing out study sessions, and interleaving content. Recognize that these are new concepts to some learners.

Give and Receive Feedback: Build a psychologically safe learning environment which normalizes feedback. Offer [balanced feedback](#) rather than the “feedback sandwich.” Solicit feedback from learners, and integrate it into future teaching sessions.

Practice Reflection: Look back in order to [process teaching experiences](#). Set aside time to reflect, and ask “why” or “how” about thought processes. Challenge your assumptions, and discuss them with colleagues.

Embrace a Quality Improvement Mindset: A good curriculum is never finished! Recognize that we are all on a trajectory to grow as educators and embrace your growth mindset. Use the [Plus/Delta](#) while teaching to receive just in time feedback about what went well and what you could improve.