



## MEASURING AND REINFORCING LEARNING

### OVERVIEW

To retain newly acquired knowledge, skills and attitudes (KSAs), learning should be reinforced over time. Measuring learning before, during and after a course will help training leads identify learning gaps and select reinforcement methods to increase learning and enhance retention.

### MEASURING LEARNING

Learning should be measured before, during and after training. Learning measurement can help training leads identify KSAs that require reinforcement, both during and after training. Collecting feedback on retention and on-the-job application can arm training leads with the information necessary to improve training. Table 1 identifies three categories of learning measurement methods training leads can employ to identify areas for in-course and post-course reinforcement.

**TABLE 1 - MEASURING LEARNING TO IDENTIFY AREAS FOR REINFORCEMENT**

	Pre- and post-tests	Performance evaluations	Follow-up assessments
Purpose	Comparing results of pre- and post-tests measures the acquisition of KSAs as a result of the training.	In-course performance evaluations measure whether learners can apply acquired KSAs. In these exercises/evaluations, the instructor or peer observer can provide feedback as to the extent the learner successfully demonstrated appropriate KSAs. Examples include: <ul style="list-style-type: none"> <li>• <b>Role plays:</b> One participant acts as the "provider" to demonstrate a counseling technique through a discussion with another participant assigned to act as the "patient"</li> <li>• <b>Simulations:</b> Participants may demonstrate life support techniques using mannequins</li> </ul>	Assessments at various post-course intervals (e.g., three and six months) measure whether learners retained acquired KSAs. For example, providers may be asked to review charts of peers to determine whether documentation is appropriate. In other cases, training participants may be asked to complete surveys or self-assessments to identify performance gaps.
Desired Outcomes	<ul style="list-style-type: none"> <li>• Poor results on post-tests may indicate a need to require prerequisite courses to impart or reinforce preliminary KSAs</li> </ul>	<ul style="list-style-type: none"> <li>• Following application exercises, peer and instructor feedback can help learners identify areas for practice of independent study</li> <li>• Evaluation can uncover the need to implement in-course reinforcement methods such as mnemonics, repetition and review or application exercises</li> </ul>	<ul style="list-style-type: none"> <li>• Post-course assessment results can identify training requiring post-course reinforcement techniques, such as refresher courses, mentoring/coaching or continuing education/training</li> </ul>

More information on learning evaluation techniques and data collection methods is included within the Training Effectiveness Toolkit.

### **REINFORCING LEARNING**

By measuring learning, training leads can identify content that requires reinforcement. Reinforcing learning concepts maximizes the benefits from training courses. Reinforcement can take place both during and after training. The following methods reinforce learning during training:

- **Mnemonics:** Mnemonics are learning techniques in the form of a rhyme, phrase, special word or acronym used to relate new knowledge to existing knowledge. For example, first responders learn the START (Simple Triage and Rapid Treatment) method. The use of mnemonics has also been successful in improving recall functions of TBI patients.<sup>1</sup>
- **Repetition and review:** Instructors can enhance learning through repetition and review of key concepts. Group or oral presentations summarizing the material or key concepts of the course will help students learn through repetition. A well-designed test/assessment can measure and reinforce learning. Periodic refresher courses or reinforcement aid long-term retention.
- **Application exercises:** Course objectives should guide the development of application exercises. For example, when training on a process, students can participate in small group exercises that require students to perform each process step. Application, which involves "seeing and doing," of recently acquired KSAs can increase retention by 60% over hearing and 70% over reading alone. Back briefs and rock drills<sup>2</sup> allow students to apply newly acquired KSAs and relate them to practice. Following application exercises, participants should receive peer and instructor feedback, which may include techniques for overcoming challenges and reinforce learning.

The following techniques can be used to reinforce learning immediately following training, and continuing at regular intervals as necessary:

- **Refresher courses:** Particularly for training that is not applied regularly, refresher courses are important. For example, Defense Support of Civil Authorities (DSCA) requires training to respond to natural disaster. If a service member has not responded to a natural disaster in a number of years, refresher courses may be required.
- **Mentoring/coaching:** Coaches outline goals and expectations and guide on-the-job performance. They provide learners with feedback on strengths and areas for improvement and collaborate with them to develop improvement plans and guidance along the way. Ideally, coaches demonstrate appropriate knowledge, skills and attitudes for learners to model.
- **Continuing education training:** Continuing education can help students maintain competencies or licenses and stay current in their fields. Continuing Medical Education (CME) often consists of changes and/or updates to current practice. CME is most often delivered face-to-face or via technology.

### **SUMMARY**

By measuring learning before, during and after the course, training leads can identify concepts that require reinforcement within the course, as well as on the job. Pre- and post-tests, in-course performance evaluations and post-training assessment are all methods training leads can use to measure learning. Learning reinforcement both during and after training fills gaps identified during learning measurement, optimizing learning and thus, enhancing student performance.

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<sup>1</sup> Hux, Karen & Manasse, Nancy. *Improving Face-Name Recall Among Survivors of Traumatic Brain Injury*, (5). Barkley Memorial Center for Special Education and Communication Disorders, University of Nebraska – Lincoln. Retrieved from <http://tbi.unl.edu/APAPoster.pdf>

<sup>2</sup> Army FM 3-19.4 Appendix C, *Training Execution Model*. Retrieved from <http://www.globalsecurity.org/military/library/policy/army/fm/3-19-4/appendc.htm>