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Testing...1,2,3

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Is this thing on?



The traditional school system we grew up in used testing as a threat to motivate us to work and study harder. Who can forget the pop quiz, final exam, or standardized testing? These experiences have given tests a bad reputation.

Although the brain is technically not a muscle, research has shown we need to treat it like one. When it comes to muscle development there are two common sayings, *use it or lose it* and *no pain no gain*. We all know the benefits of working out, but most people do not do it or we would all be walking around with nice buff muscles. Even though there is evidence the muscle development concepts also apply to the brain the natural tendency is to take the easiest path available.

This [study](#) compared the same class, one presented with a lecture and the other utilizing active instruction. The research found that students preferred the lecture format but performed better in the active learning format class. Students in the active learning class felt they did not learn as much. “These results suggest that when students experience the increased cognitive effort associated with active learning, they initially take that effort to signify poorer learning” (Deslauriers et al., 2019). The path of least resistance and the perception of reduced learning

because of cognitive effort presents an uphill battle to convincing people that testing is a good thing.

Testing to learn and as a form of review has been labeled retrieval practice. The books, *How We Learn and Why It Happens* by Benedict Carey, and *Make It Stick: The Science of Successful Learning* by Peter C Brown, Henry L Roediger III, and Mark A McDaniel, provide detailed accounts of the research which conclude trying to retrieve information results in better long term recall than reading or rewriting it. Even if the information is new, a person retains more by attempting to answer questions and being given the correct response than if they read it or someone tells them.

Do you want to try it for yourself? This exercise will take about 20 minutes over two sessions.

1. Go to this [assessment](#), answer the questions and then follow the steps at the bottom.
2. Wait at least 48 hours.
3. Go to this [assessment](#), test yourself and compare your results.

Incorporating retrieval practice in to training means moving away from the idea that tests are only issued at the end to assess learning and record a grade.

Pre-Assessments

A pre-assessment can be given at the beginning of a course or topic. This type of assessment is only for personal reflection and learning. Do not collect, grade, or share the responses. A pre-assessment serves a few purposes. It primes the brain by getting participants thinking about the topic, including their existing

Testing...con't

knowledge and experience. Getting answers wrong will pique interest and motivate people to learn the correct answer. Prerequisite knowledge can also be included as review which ensures everyone is starting from the same place.

Formative Assessments

Formative assessments are used throughout a course to ensure participants are retaining what is being taught and to practice applying content to real situations. These assessments are often not graded but if they are assign a low weighting to each one as a portion of the final grade. Formative assessments may be incorporated at the end of a topic, or as review at the beginning or end of the day. They should also be used to review topics covered previously in order to interleave the topics (but that's another article.)

Summative Assessments

The summative or final test is still relevant for assessing and confirming the course objectives are met to a satisfactory level. The format of the test should be driven by the learning objectives. If the objective is to conduct a witness interview the test should be a scenario or if scenarios are not feasible a written test with case-based questions. The expectations and pass grade for the summative assessment need to be communicated at the

beginning of the course. Remember people learn from their mistakes, so it is important to provide feedback on the summative assessment. We are preparing people to do a job, not teaching to a test.

You may face resistance and not be the most popular instructor because you're increasing cognitive effort, but your training will be more effective if you incorporate testing throughout.

Reference

Deslauriers, L., McCarty, L., Miller, K., Callaghan, K. and Kesten, G., 2019. *Measuring Actual Learning Versus Feeling Of Learning In Response To Being Actively Engaged In The Classroom*. [PDF] Berkeley: University of California. Available at: <<https://www.pnas.org/content/116/39/19251>> [Accessed 1 September 2020].

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