

For Active Dogs!

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Coaching dog enthusiasts to embrace the unique needs of active dogs through teaching, mentoring and educational media

VOLUME 2 | ISSUE 12 | November 2019

Perfect Practice Doesn't Make Perfect. IMPERFECT Practice Makes Perfect



Remember the first time you had to give a presentation in public? You probably wrote down what you wanted to say, then read it out loud over and over, repeating the words just as you wanted to say them in the presentation. It was really, really boring, and you were thinking, “How often do I need to do this before it will stick in my head?”

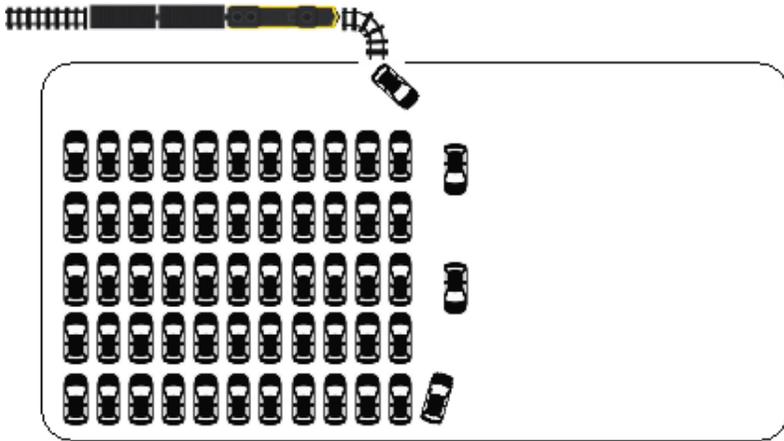
Researchers at Johns Hopkins' Department of Rehabilitation Medicine studying how people learn made an interesting discovery (1). They found out that the old adage, “perfect practice makes perfect,” was actually not quite true. Whether it's memorizing a presentation or learning how to do a front cross in agility, it turns out that we learn faster if we don't practice perfectly. Let me explain...

How We Learn

When we first begin to learn something, new neuronal pathways send messages to an area of the brain where they are stored. The more those pathways continue to deliver information to the memory storage area, the more permanent

the memories become.

Here's an analogy. There is a huge parking lot on the south end of Baltimore with an elevated highway nearby. When you drive by that parking lot, you can see hundreds, if not thousands, of cars, all identical except for their different colors. These cars arrive by train and are offloaded and then parked in incredibly neat rows – row after row of the same make and model of car. As the train keeps delivering cars, the lot gradually gets full (Figure 1).

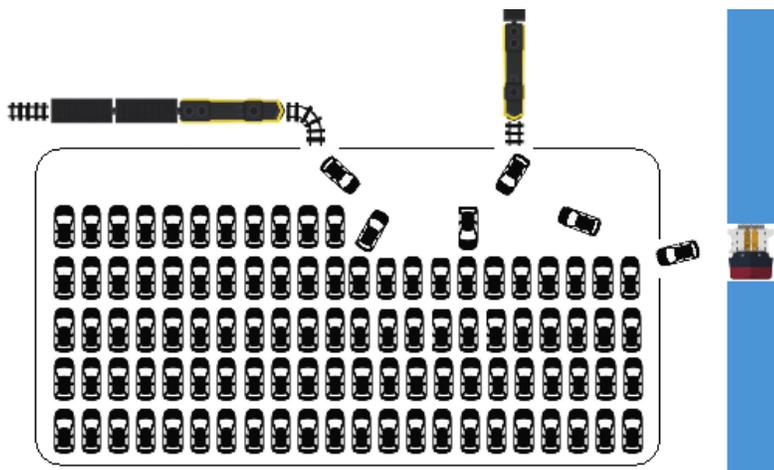


The train that is delivering the cars is like a neuronal pathway delivering information to your brain. If that pathway keeps providing information, the brain area for storing that information will eventually become full. That's why if you practice that presentation over and over again, you master it.

Learning Faster

But the Hopkins researchers found that if you also practice slightly modified versions of a task, you learn faster than if you keep practicing the exact same thing multiple times in a row. The scientific term for this process is *memory reconsolidation*. So let's return to the example of that presentation that you want to perfect. If you sometimes read it as fast as you can, and other times you read it slowly, leaving pauses for emphasis at various points, and other times you practice with a different projector or holding a microphone, you would, in fact, perfect the presentation faster.

Using our analogy again, picture multiple train tracks leading to the car parking lot. Perhaps there is also a ship in the harbor nearby and it is bringing cars from foreign manufacturers. All the cars are arriving at the lot, but they are entering via slightly different locations. That would allow the lot to fill up much faster (Figure 2).



Interestingly, the process of memory reconsolidation takes about 6 hours. As a result, the slight changes in the way the task is presented can't be made all at the same time – they have to occur with gaps of at least 6 hours. As a result, perfect learning takes time. This process of memory reconsolidation works for both informational learning and for motor learning.

Training Tip

How does this research apply to how we train our canine companions? Let's look at a dog learning 2o2o contacts (a technique in which the dog stops with the two front feet on the ground and the two back feet on a contact obstacle) in agility. Typically, we would use a travel board (a 3' long by ~10" wide board that is elevated about 4" off the ground). We would lure the dog onto the board and when the dog steps off so that its two front feet are on the ground but its back feet remain on the board, we'd click or praise and give a treat. If we always stood beside the board when we trained, the dog would learn 2o2o contacts given enough repetition.

But if, as we train over several days, we shift our position to one or the other side of the board, we run past the board, we send the dog to the board ahead of us, etc., the dog will learn how to do 2o2o contacts faster. In training, we often wait to make these types of changes late in the learning stage, once we feel that the dog knows the task. We call that "proofing." But the Hopkins research suggests that if you introduce slight variations early in the learning process, learning occurs substantially faster.

But note, the changes you make in the training picture must be slight – they cannot be massive deviations in the task or the learning speed declines, as if the train tracks veer away from the parking lot.

You can also use this principle for anything you'd like to learn quickly, whether it's an agility move, perfect footwork in rally or obedience, or the words to your favorite song. Isn't this great news? You don't have to be perfect! In fact, it's better to be a little imperfect!

References

1. Wymbs NF, Bastian AJ, Celnik PA. Motor skills are strengthened through reconsolidation. *Curr Biol* 2016;26(3):338-343 [Read PDF](#)