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Gamification

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Gamification

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Learning new movement skills has always been thought of as occurring as a result of practice. Hours and hours of practice with mastery requiring the magic number of 10,000 hours of deliberate practice (Ericsson KA et al 1993). We have learned that other than grit, passion, aptitude and/or genetic gifts there are other ways to enhance learning. While instruction is key the question of what and how the instruction should be delivered is also essential.

Gamification is an example of creating a problem-solving environment with camaraderie where tasks can be explored and enhanced in a goal-oriented manner. They are generally partner-based with the emphasis being on novel environmental constraints, safety, and fun. The constraints can be altered based on dynamic system theory (DST) by modifying the *environment, task, or individual* (Vargus et al 2003). An example of coaching by modifying the environment is having a person squat while facing near a wall. In this instance if someone has a tendency to slump forward or bend excessively from their waist by standing near the wall it will allow them to “figure out” how to keep their back straighter during squatting. Since the person learns this on their own it is more likely to be retained and transfer to later activities and skills.

Studies have shown that if coaching instruction emphasizes the “correct” vs “incorrect” pattern that skill can be acquired more quickly. Paradoxically however its retention actually suffers from this type of training which is called ‘blocked’ (Battig 1979). A different form of training called ‘random’, actually lets a person problem-solve with external feedback from a goal such as jumping as high as possible, or pointing a finger towards a target.

More often than not in life movements are performed in unique rather than stereotypical ways due to changing environmental, tactical or strategic contexts. In fact our brain learns the process of how to adapt via exposure to novel or variable situations. So we should train with this in mind. “The concept of the human beings as complex dynamic systems changes the mechanical view of athletes and the adaptation process based on the computer metaphor. This change in paradigm affects training proposals stemming from classical training theories and leads to a demand for its principles to be updated.....The concept of the correct or right response has been fundamentally changed by the new paradigm. According to the research results obtained by applying DST to the study of human movement, the athlete does not need to know the solution of a new task beforehand.” (Vargus et al 2003)

The way we like to think about this is well described by Todd Hargrove (2014), “*Movements are not “right” or “wrong”...it depends on the goal, the individual, the context... Teach movement by giving more choices and awareness, NOT by telling people how to move*”. The famous movement therapist Moishe Feldenkrais went as far as saying “*it is incorrect to correct*”.

Another, way of thinking of skill acquisition is in terms of external and internal cues. Internal cues like “squeeze your glutes” (buttocks) don’t work as well in someone squatting as an external cue such as “*imagine a large window between your knees*” (Wulf 2013). The external cues let a person problem-solve or strategize on their own. The muscle symphony is more efficient. Most importantly, when a person problem-solves on their own, rather than being told what to do, the movement pattern is more transferable to their daily activities or sports.

Vladimir Janda a Medical Neurologist and Rehabilitation specialist emphasized that people are less motivated to exercise if they have to be hypervigilant. Thus, he recommended minimizing the stage of motor learning where one is having to be conscious of their form. Instead he

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